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ABSTRACT

The report (in working draft form) of the Connecticut Task Force on Curriculum for the Gifted and Talented summarizes three theoretical models for curriculum planning, gives an overview of elementary and secondary curricula currently being used in Connecticut school districts, and provides an annotated bibliography on curriculum development. Stressed is a view of curriculum which includes both product and process variables in a differentiated curriculum. Explained with examples are the application to curriculum for the gifted on the following models: J. P. Guilford's Structure of Intellect model, the Taxonomy of Educational Objectives developed by B. Bloom, and the Cognitive-Affective interaction model of F. Williams which identifies key pupil behaviors, teacher behaviors, and curriculum content. Briefly described are curricula currently being used in approximately 25 Connecticut school districts including district-wide, regional, arts-oriented, academic, semi-separated, consultative, well-established, and pilot programs. Lists of materials being used in the programs are provided. The final section consists of an extensive bibliography on curriculum development including an annotated listing of approximately 45 curriculum materials or articles on curriculum development, and approximately 30 abstracts of selected materials. (DB)

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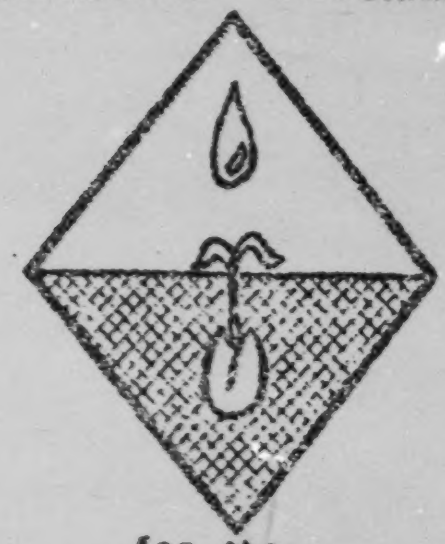

for the
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CURRICULUM GUIDELINES
FOR THE GIFTED AND TALENTED

REPORT OF THE CONNECTICUT TASK FORCE ON CURRICULUM

(WORKING DRAFT)

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HARTFORD, CONNECTICUT

JUNE 1974

FOREWORD

This report represents the culmination of the efforts of a large number of people to meet the needs of professional personnel involved in the development of curriculum materials for the gifted and talented in Connecticut.

For the most part, the work of writing and compiling this booklet was done by teachers and administrators in gifted programs in the state. They accomplished this task in a matter of a few short months, meeting afternoons and evenings on their own time. In addition to doing research and writing articles, the task force leader and members have attempted to bring together the best information from a wide variety of sources. Much credit belongs to individuals and agencies from outside Connecticut who have been kind enough to give us permission to reprint some of their materials.

This report is a preliminary working draft and is subject to further revision. We welcome all comments and suggestions for improvement, since your responses will provide valuable input in the preparation of the final draft. Please address all correspondence to William G. Vassar, Box 2219, Connecticut State Department of Education, Hartford, Connecticut, 06115.

We wish to extend our personal thanks to all who have worked so hard to produce this report in the interest of the gifted and talented children of Connecticut.

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PREFACE

This report of the Task Force on Curriculum for the Gifted is primarily intended to be of some practical help for teachers in Connecticut. It is also intended to show the types of curricula being offered in representative programs in the state and the variety of materials being used. This latter intent may be of interest to professionals outside of Connecticut.

We summarized three theoretical models that are often used when planning curriculum, and we tried to show how they could be applied to the needs of the gifted. It will probably be necessary to read further in the works of the authors of these models unless one is familiar with all three (Bloom, Guilford, and Williams).

In the section on curricula currently being used, we tried to do several things. We included both elementary and secondary programs as well as a variety of types of programs - district-wide, regional, arts-oriented, academic, semi-separated, consultative, well-established, and pilot. We also included lists of materials being used by teachers and students in these programs as well as sources of the materials. We did not include methods of instruction because we felt that this is well-covered in other documents and would be of little practical use to our readers.

There is a section listing some of the many books and publications available which are relevant to curriculum for the gifted. We were selective and arbitrary in the listing and chose only those readings which dealt directly with curriculum and which were relatively accessible. In this section we noted agencies which can be of great help in procuring books and articles or can do searches of current literature.

Great gratitude and appreciation is due the many people who worked on and with the Task Force. The teachers who contributed descriptions of their programs are furthering the cause of the gifted far beyond their own towns and regions. The Task Force members on the town, college, and state levels contributed many hours of time in meetings, travel, and writing. We sincerely thank them all.

Annie Campbell

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Many thanks to the following individuals and groups who have given so generously of their time and expertise in the preparation of this publication:

Dr. Rudolph Pohl and Dr. Larry Coleman of Southern Connecticut State College for the willing support and encouragement and the precious time they gave to this task force

Dr. Frank Williams, University of Oregon, and Dr. J.P. Guilford for granting us permission to reprint valuable materials from their publications

The numerous Connecticut programs for the gifted and talented for allowing us to incorporate their materials on curriculum and program guidelines

Capitol Region Education Council and especially Charles Haller and Virginia Wells for their assistance since the inception of the project and for the smooth handling of the publication of this report.

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INTRODUCTION

Current efforts to create curriculum materials for gifted children have made significant progress beyond the long-standing debate on the issue of acceleration versus enrichment. It is generally assumed that each of these two approaches has its appropriate uses as well as its limitations. Neither a haphazard, shotgun approach to enrichment nor a mere moving down of materials from upper grade levels will satisfactorily serve as the basis for a curriculum truly differentiated for the gifted and talented.

Within the past decade, efforts have been concentrated on creating a curriculum which is based on an integration of various theoretical models. What has emerged is a two-part view of curriculum which explores both product and process.

Product focuses on the subject matter, the facts, concepts, and generalizations of various disciplines. In-depth and open-ended exploration of special interests is encouraged, both in the form of independent study and in more highly structured sequences of instruction. Areas not usually covered in traditional courses of study may be included, such as psychology, philosophy, humanities, logic, computer langauges, and statistics. The key factors in the selection of content are intellectual challenge, stimulus to the exploration of further knowledge, and understanding of broadly applicable concepts.

Process refers both to the development of skills in retrieving and applying knowledge and to the improvement of intellectual processes. The first area includes study skills and use of resources and is aimed at helping gifted children become effective independent learners. The second area focuses on the enhancement of intellectual operations, especially the higher cognitive processes in which the gifted typically show so much potential. These processes include the more abstract cognitive operations and complex products of Guilford's Structure-of-Intellect model: divergent production, evaluation, transformations, and implications; the higher-level categories of Bloom's Taxonomy of Objectives in the Cognitive Domain: analysis, synthesis, and evaluation; and Krathwohl's affective categories, including attitudes, appreciations, and values. Also included are the creative processes of fluency, flexibility, elaboration, and originality, and the problem-solving and inquiry skills.

These process areas appear to offer great promise as foundations of curriculum for the gifted. Such children are usually capable of superior performance at these higher intellectual levels, yet the regular academic curriculum seldom offers systematic exposure and opportunity for significant growth in these areas.

HOW TO USE THIS BOOKLET

This booklet is designed to provide guidelines for the development of curriculum materials for the gifted. The intent is not to present detailed lesson plans, but rather to include an introduction to some of the theoretical background, overviews of a sampling of programs in Connecticut, and a listing of sources of actual curriculum materials as well as books and articles on curriculum. In this way, interested readers can gain some perspective on the entire field and prepare themselves for the exciting process of writing curriculum for gifted and talented children. Whether the reader chooses to adopt, adapt, or create new materials, it is hoped that this booklet will prove to be a valuable stimulus and resource.

I. THEORETICAL FOUNDATIONS FOR THE

DEVELOPMENT OF CURRICULUM FOR THE GIFTED :

A. GUILFORD'S STRUCTURE-OF-INTELLECT MODEL

B. COGNITIVE AND AFFECTIVE DOMAINS

C. COGNITIVE-AFFECTIVE INTERACTION MODEL- WILLIAMS

GUILFORD'S STRUCTURE-OF-INTELLECT MODEL

J. P. Guilford's Structure-of-Intellect theory has greatly broadened our view of intelligence by establishing that intelligence is composed of 120 different factors and is not composed of just one or a few global, general types of ability as was previously supposed. Not only does this help to explain individual profiles of strengths and weaknesses in intellectual areas, but it also has many implications for curriculum development for gifted and talented pupils.

Curriculum for these students must reflect this broadened conception and move toward a recognition of many different types of talents and abilities, not just the abstract verbal abilities which are identified by traditional intelligence tests. Guilford's theory leads to the realization that "teaching kids to think" is too vague a goal. There are, after all, a tremendous variety of ways of thinking. Curriculum for the gifted should recognize the complexity of the thinking process and provide specific ways of fostering each component.

Another of Guilford's contributions is the insight he offers into creative thought processes. By specifying Divergent Production as one of the major thought processes, he has stimulated much work in the areas of creative thinking and problem-solving. Finally, the Structure-of-Intellect model reveals the complex interrelationships of various abilities. Although not rigidly hierarchical, the model suggests that higher-level abilities, such as convergent and divergent production and evaluation, may be dependent on the adequacy of lower-level functions such as cognition and memory. Divergent production, for example, depends upon a fund of knowledge.

Utilizing clues from the Guilford Model, curriculum for the gifted needs to:

1. Be <u>flexible</u>, rather than rigid or strictly outlined, to provide opportunity to change and seek higher levels of content.

2. Be <u>Openended</u>, to provide for unlimited content areas wherein pupils may initiate thinking with great variety of ideas.

3. Be an <u>interaction</u> between pupils to seek new dimensions of content, inviting differences of opinion as a natural learning technique.

4. Utilize <u>brainstorming</u> techniques occasionally to reinforce evaluative principles, such as deferred judgment, in arriving at meaningful decisions.

5. Provide for learning to <u>restructure</u> and <u>combine ideas</u> in order to redefine "old" ideas into "new" dimensions.

6. Provide opportunity for divergent thinking.

7. Stress the concepts of originality and inventiveness as means of reaching new solutions to problems.

8. Provide time to think about and incubate new ideas and new solutions.

9. Establish problems that stimulate many ideas and new solutions reinforcing fluency of thought.

10. Reinforce spontaneous flexibility through eliminating barriers to thinking and encouraging idea associations.

11. Encourage unusual solutions to problems and adaptations of ideas.

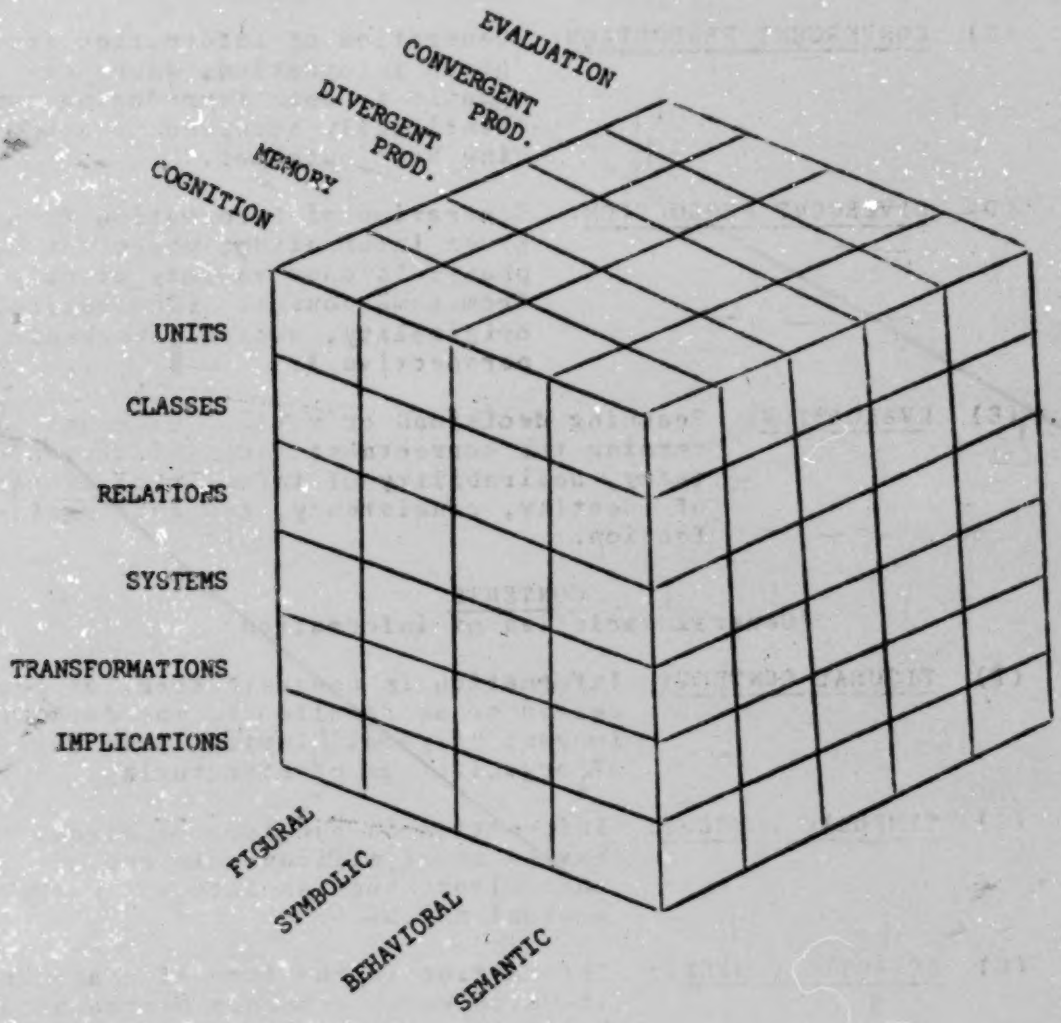
12. Invite new predictions and implications about content under discussion.

13. Develop questions about changes or transformations in content under discussion.

14. Encourage elaboration upon ideas to provide new and more complex details.

DEFINITIONS OF FACTORS COMPOSING THE STRUCTURE OF INTELLECT*

Processes, contents, and products are three dimensions of intellect which can best be represented in a cubic matrix.



*Guilford, J. P.: University of Southern California, Department of Psychology. Permission to use copyrighted material granted, 1966.

MAJOR PROCESSES

(Intellectual activities which the organism does with the raw materials of information.)

(C) COGNITION: Discovery, awareness, rediscovery, or recognition of information in various forms; comprehension; understanding.

(M) MEMORY: Retention of information in any form.

(N) CONVERGENT PRODUCTION: Generation of information from given information, where emphasis is upon reproducing conventionally accepted or achieving best outcomes.

(D) DIVERGENT PRODUCTION: Generation of information from given information, where the emphasis is upon variety of output from same source. (Innovation, originality, unusual synthesis or perspective.)

(E) EVALUATION: Reaching decisions or making judgments concerning the correctness, suitability, adequacy, desirability of information in terms of identity, consistency, and goal satisfaction.

CONTENTS

(General varieties of information)

(F) FIGURAL CONTENT: Information in concrete form, as perceived or as recalled in the form of images; "figural" implies some degree of organization of structuring.

(S) SYMBOLIC CONTENT: Information in the form of signs, having no significance in and of themselves, such as letters, numbers, musical notes.

(M) SEMANTIC CONTENT: Information in the form of meanings to which words commonly become attached, hence most notable in verbal thinking; involved in verbal tests, where things signified by words must be known.

(B) BEHAVIORAL CONTENT: Information essentially non-verbal, involved in human interactions, where awareness of attitudes, needs, desires, intentions, thought, etc., of other persons is important. (Last page of NSWP attempts to assess this type of information on an observation basis which has relevance for the schools.)

PRODUCTS

(Results from the organism's processing of information)

(U) UNITS: Segregated or circumscribed items of information having "thing" character.

(C) CLASSES: Aggregates of items of information grouped by common properties.

(R) RELATIONS: Recognized connections between units of information based upon variables that apply to them.

(S) SYSTEMS: Organized or structured aggregates of items of information; complexes of interrelated or interacting parts.

(T) TRANSFORMATIONS: Changes in existing or known information or in its use, as in production.

(I) IMPLICATIONS: Extrapolations of information, in the form of expectancies, predictions, antecedents, and consequents.

GLOSSARY

1 - COGNITION = C

FIGURAL IMPUTS

CFU UNITS: Visual Recognition: The ability to recognize familiar figures. Auditory Figural Recognition: The ability to recognize meaningful vocal material.

CFC CLASSES: Figural Classification: The ability to classify perceived objects.

CFR RELATIONS: Education of Figural Relations: The ability to discover relations in perceptual material.

CFS SYSTEMS: Spatial Orientation: The ability to perceive spatial patterns or to maintain orientation with respect to objects in space.

CFT TRANSFORMATIONS: Visualization: The ability to manipulate or transform an object into another visual arrangement.

CFI IMPLICATIONS: Perceptual Foresight: The ability to explore visually possible courses of action in order to select the most effective ones.

SYMBOLIC IMPUTS

CSU UNITS: Symbol Recognition: The ability to construct a word using designated letters.

CSC CLASSES: Recognition of symbolic classes: Seeing common features of numbers.

CSR RELATIONS: Symbolic Relations: The ability to discover relations involving letter patterns.

CSS SYSTEMS: Symbolic Patterns: The ability to discover complex relationships--patterns or systems.

CST TRANSFORMATIONS: Symbolic Transformation: The ability to observe reorganization of symbols.

CSI IMPLICATIONS: Cognition of Symbolic Implications. Rearranging symbols in a specified order.

SEMANTIC IMPUTS

CMU UNITS: Verbal Comprehension: Vocabulary, Reading Comprehension.

CMC CLASSES: Conceptual Classification: Classifying words and sentences; the ability to classify verbal concepts.

CMR RELATIONS: Semantic Relations: The ability to discover relations in conceptual material.

CMS SYSTEMS: General Reasoning: The ability to comprehend or structure problems in preparation for solving them.

CMT TRANSFORMATIONS: Penetration: The ability to see several meanings to a word or expression.

CMI IMPLICATIONS: Conceptual Foresight: The ability to anticipate the needs or the consequences of a given situation.

2 - MEMORY = M

FIGURAL IMPUTS

MFU UNITS: Visual Memory: The ability to recall material learned by visual presentation.
Auditory Memory: The ability to recall meaningful sequences of auditory stimuli.

MFC CLASSES: Space Memory: The ability to identify forms previously learned. Position Memory: The ability to recall number-word combinations.

MFS SYSTEMS: Memory for Spatial order: The ability to recall an arrangement of objects previously presented.

SYMBOLIC IMPUTS

MSU UNITS: Memory Span: The ability to recall perfectly for immediate reproduction a series of items after only one presentation of the series.

MSR RELATIONS: Rote Memory: The ability to remember pairs of meaningless sets of letters, syllables, numbers.

MSI IMPLICATIONS: Numerical Facility: Memory for well-practiced number operations.

SEMANTIC IMPUTS

MMU UNITS: Memory for Ideas: The ability to reproduce previously presented ideas.

MMR RELATIONS: Meaningful Memory: The ability to remember meaningful pairs of words.

MMS SYSTEMS: Memory for Temporal Order: The ability to remember the order in which previous material was presented or order in which events occurred.

3 - DIVERGENT PRODUCTION = D

FIGURAL IMPUTS

DFU UNITS: Ability to group and regroup line elements in various ways.

DFC CLASSES: Figural Spontaneous Flexibility: Ability to reclassify perceived objects in various ways.

DFS SYSTEMS: (New) Ability to construct varied organizations of same units.

DFT TRANSFORMATIONS: Figural Adaptive Flexibility: The ability to change set in order to meet new structural requirements imposed by changing problems.

DFI IMPLICATIONS: (New) Ability to elaborate upon given lines or outlined objects.

SYMBOLIC IMPUTS

DSU UNITS: The ability to produce rapidly words fulfilling specified structural requirements.

DSC CLASSES: Ability to reclassify letters or numbers or sets of them in various ways. (New)

DSR RELATIONS: Ability to generate a variety of relations between numbers or letters. (New)

DSI IMPLICATIONS: Ability to derive a variety of consequences from a symbolic expression. (New)

DSS SYSTEMS: Ability to produce letter or number systems (as in codes and equations). (New)

SEMANTIC IMPUTS

DMU UNITS: Ideational Fluency: The ability to call up many ideas in a specified class.

DMC CLASSES: Semantic Spontaneous Flexibility: The ability to produce a list of ideas from different classes.

DMR RELATIONS: Associational Fluency: The ability to produce words from a restricted area of meaning such as synonyms or adjectival completion for a simile, or producing associated words.

DMS SYSTEMS: (New) Expressional Fluency: Ability to organize phrases and sentences.

DMT TRANSFORMATIONS: Originality: The ability to produce remotely associated, clever, or uncommon responses: plot titles, new symbols, ideas.

DMI IMPLICATIONS: Semantic Elaboration: The ability to specify details that contribute to the development of a scheme or the variation of an idea.

4 - CONVERGENT PRODUCTION = N

FIGURAL IMPUTS

NFT TRANSFORMATIONS: Figural Redefinition: The ability to give up one perceived organization of lines in order to see another.

NFI IMPLICATIONS: Form Reasoning: The ability to solve simple equations in terms of familiar forms. Also to substitute one operation for another.

SYMBOLIC IMPUTS

NSR RELATIONS: Symbolic Correlates: The ability to find a non-verbal response to fulfill a given relationship.

NSS SYSTEMS: Convergent Production of Symbolic Systems: State the order in which words or numerical operations should go to get from start to stated goal.

NST TRANSFORMATIONS: Symbolic Redefinition: The ability to reorganize elements in terms of the structural properties of material, assigning a new function or use to the elements involved.

NSI IMPLICATIONS: Symbol Substitution: The ability to derive a symbol.

SEMANTIC IMPUTS

NMU UNITS: Concept Naming: The ability to state correct names of concepts and ideas.

NMC CLASSES: Convergent Production of Semantic Classes: Forming correct groups from a large number of words or pictured objects.

NMS SYSTEMS: Ordering: The ability to arrange objects or events into a meaningful sequence.

NMR RELATIONS: Semantic Correlates: The ability to produce a response to fit a given or implied conceptual relation like naming direct opposites.

NMT TRANSFORMATIONS: Semantic Redefinition: The ability to shift the function of an object or part of an object and use in a new way.

NMI IMPLICATIONS: Deduction: Ability to state correct deduction from given facts.

5 - EVALUATION = E

FIGURAL IMPUTS

EFU UNITS: Figural Identification: The ability to find a figure identical to a given figure among similar figures.

EFC CLASSES: Length Estimation: The ability to compare the length of lines or distances.

SYMBOLIC IMPUT

ESU UNITS: Symbolic Identification: The ability to recognize identical letter or numbers.

ESR RELATIONS: Symbol Manipulation: The ability to decide which letter relations are consistent with others.

SEMANTIC IMPUTS

EMR RELATIONS: Logical Evaluation: The ability to use logical relationships in the testing of the correctness of a conclusion.

EMS SYSTEMS: Experimental Evaluation: The ability to appraise aspects of common situations in terms of agreement with experience such as pointing out incongruities or missing objects.

EMT TRANSFORMATIONS: Judgment: The ability to make wise choices among possible improvisations.

EMI IMPLICATIONS: Sensitivity to Problems: The ability to recognize practical problems, to see defects and deficiencies.

EDUCATIONAL OBJECTIVES FOR TEACHING THE INTELLECTUALLY GIFTED ACCORDING TO BLOOM'S TAXONOMY

In order to formulate a curriculum responsive to the needs of gifted students, it is important that we develop a set of appropriate objectives, outlining the structure of the program, and clarifying those techniques which set it apart from programs used in heterogeneously grouped classrooms. Such an outline will enable the professional staff to differentiate and evaluate the special course of study and to communicate in specifics about the program with the general public.

Bloom's TAXONOMY OF EDUCATIONAL OBJECTIVES is one method of classification that can be used to organize teaching methodology. "By taxonomy we mean a system for classifying objectives, principles and facts in a manner consistent with their natural or logical interrelationships. Such a system will oftentimes show a hierarchical ordering of elements from simple to complex and from concrete to abstract.

"The 'Affective Domain' provides a structure which may help educators understand and improve mental processes of receiving (attending), responding, valuing, organizing, and characterizing by a value or value complex. The 'Cognitive Domain' encompasses processes of remembering, comprehending, applying, analyzing, synthesizing, and evaluating knowledge. While separate domains do have merit from the perspectives of research and development, the authors of the TAXONOMY have stressed repeatedly the effects of each on the other."1

Included in the outline are seven different areas of thought process, each dependent on those before it and developing from them. The categories can be utilized with different emphasis, and activities can be planned accordingly. The following seven higher level areas, which are explained in Bloom's TAXONOMY, should be used with gifted students to develop creative and cognitive abilities. They are:2

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1. Plowman, Paul D., An Interpretation of the Taxonomy of Educational Objectives. 1968

2. This information was prepared by the California Project Talent, Revised Guidelines for Establishing and Evaluating Programs for Mentally Gifted Minors, a California State Department publication.

1. Translation - the ability to put a communication into another language, such as an abstract idea into a concrete one.

2. Interpretation - comprehension of the relationships between parts, rearranging and relating them to one's own experience.

3. Extrapolation - going beyond trends or tendencies in given data.

4. Application - using old principles to solve new problems.

5. Analysis - breaking down material into constituent parts and detecting relationships of the parts and the way they are organized.

6. Synthesis - putting together and rearranging elements into a new whole.

7. Evaluation - giving judgment concerning ideas, things, or events.

The charts on the following pages describe the cognitive and affective taxonomies in greater detail and provide illustrations of each level in behavioral terminology.

An example of an exercise employing the instrumentation of Bloom's TAXONOMY follows the charts.

Table 1: Instrumentation of the Taxonomy of Educational Objectives: Cognitive Domain*

Taxonomy Classification	KEY WORDS: Examples of Infinitives	KEY WORDS: Examples of Direct Objects
1.00 Knowledge		
1.10 Knowledge of Specifics		
1.11 Knowledge of Terminology	to define, to distinguish, to acquire, to identify, to recall, to recognize	vocabulary, terms, terminology, meaning(s), definitions, referents, elements
1.12 Knowledge of Specific Facts	to recall, to recognize, to acquire, to identify	facts, factual information, (sources), (names), (dates), (events), (persons), (places), (time periods), properties, examples, phenomenon
1.20 Knowledge of Ways and Means of Dealing with Specifics		
1.21 Knowledge of Conventions	to recall, to identify, to recognize, to acquire	form(s), conventions, uses, usage, rules, ways, devices, symbols, representations, cycle(s), format(s)

* Bloom, Benjamin S. (ed.), Taxonomy of Educational Objectives--The Classification of Educational Goals, Handbook I, Cognitive Domain. New York: David McKay Company, Inc., 1956.

Taxonomy Classification	KEY WORDS Examples of Infinitives	Examples of Direct Objects
1.22 Knowledge of Trends, Sequences	to recall, to recognize, to acquire, to identify	action(s), processes, movement(s), trend(s), sequence(s), causes, relationship(s), forces, influences
1.23 Knowledge of Classifications and Categories	to recall, to recognize, to acquire, to identify	area(s), type(s), feature(s), class(es), set(s), division(s), arrangement(s), classification(s), category/categories
1.24 Knowledge of Criteria	to recall, to recognize, to acquire, to identify	criteria, basics, elements
1.25 Knowledge of Methodology	to recall, to recognize, to acquire, to identify	methods, techniques, approaches, uses, procedures, treatments
1.30 Knowledge of the Universals and Abstractions in a Field		
1.31 Knowledge of Principles	to recall, to recognize, to acquire, to identify	principle(s), generalization(s), propositions, fundamentals, laws, principal elements, implication(s)
1.32 Knowledge of Theories and Structures	to recall, to recognize, to acquire, to identify	theories, bases, interrelations, structure(s), organization(s), formulation(s)

Taxonomy Classification	KEY WORDS Examples of Infinitives	Examples of Direct Objects
2.00 Comprehension		
2.10 Translation	to translate, to transform, to give in own words, to illustrate, to prepare, to read, to represent, to change, to rephrase, to restate	meaning(s), sample(s), definitions, abstractions, representations, words, phrases
2.20 Interpretation	to interpret, to reorder, to rearrange, to differentiate, to distinguish, to make, to draw, to explain, to demonstrate	relevancies, relationships, essentials, aspects, new view(s), qualifications, conclusions, methods, theories, abstractions
2.30 Extrapolation (Implications)	to estimate, to infer, to conclude, to predict, to differentiate, to determine, to extend, to interpolate, to extrapolate, to fill in, to draw	consequences, implications, conclusions, factors, ramifications, meanings, corrolaries, effects, probabilities
3.00 Application	to apply, to generalize, to relate, to choose, to develop, to organize, to use, to employ, to transfer, to restructure, to classify	principles, laws, conclusions, effects, methods, theories, abstractions, situations, generalizations, processes, phenomenon, procedures

Taxonomy Classification		KEY WORDS Examples of Infinitives	Examples of Direct Objects
4.00	Analysis		
4.10	Analysis of Elements	to distinguish, to detect, to identify, to classify, to discriminate, to recognize, to categorize, to deduce	elements, hypothesis/hypotheses, conclusions, assumptions, statements (of fact), statements (of intent), arguments, particulars
4.20	Analysis of Relationships	to analyze, to contrast, to compare, to distinguish, to deduce	relationships, interrelations, relevance, relevancies, themes, evidence, fallacies, arguments, cause-effect(s), consistency/ consistencies, parts, ideas, assumptions
4.30	Analysis of Organizational Principles	to analyze, to distinguish, to detect, to deduce	form(s), pattern(s), purpose(s), point(s) of view(s), techniques, bias(es), structure(s), theme(s), arrangement(s), organization(s)
5.00	Synthesis		
5.10	Production of a Unique Communication	to write, to tell, to relate, to produce, to constitute, to transmit, to originate, to modify, to document	structure(s), pattern(s), product(s) performance(s), design(s), work(s), communications, effort(s), specifics, composition(s)
5.20	Production of a Plan, or Proposed Set of Operations	to propose, to plan, to produce, to modify, to design, to specify	plan(s), objectives, specification(s), schematic(s), operations, way(s), solution(s), means

Taxonomy Classification		KEY WORDS Examples of Infinitives	Examples of Direct Objects
5.30	Derivation of a Set of Abstract Relations	to produce, to derive, to develop, to combine, to organize, to synthesize, to classify, to deduce, to develop, to formulate, to modify	phenomenon, taxonomies, concept(s), scheme(s), theories, relationships, abstractions, generalizations, hypothesis/hypotheses, perceptions, ways, discoveries
6.00	Evaluation		
6.10	Judgments in Terms of Internal Evidence	to judge, to argue, to validate, to assess, to decide	accuracy/accuracies, consistency/ consistencies, fallacies, reliability, flaws, errors, precision, exactness
6.20	Judgments in Terms of External Criteria	to judge, to argue, to consider, to compare, to contrast, to standardize, to appraise	ends, means, efficiency, economy/ economies, utility, alternatives, courses of action, standards, theories, generalizations

Table II: Instrumentation of the Taxonomy of Educational Objectives: Affective Domain

Taxonomy Classification		KEY WORDS	
		Examples of Infinitives	Examples of Direct Objects
1.0	Receiving (Attending)		
1.1	Awareness	to differentiate, to separate, to set apart, to share	sights, sounds, events, designs arrangements
1.2	Willingness to Receive	to accumulate, to select, to combine, to accept	models, examples, shapes, sizes, meters, cadences
1.3	Controlled or Selected Attention	to select, to posturally respond to, to listen (for), to control	alternatives, answers, rhythms, nuances
2.0	Responding		
2.1	Acquiescence in Responding	to comply (with), to follow, to commend, to approve	directions, instructions, laws, policies, demonstrations
2.2	Willingness to Respond	to volunteer, to discuss, to practice, to play	instruments, games, dramatic works, charades, burlesques
2.3	Satisfaction in Response (Zest)	to applaud, to acclaim, to spend leisure time in, to augment	speeches, plays, presentations, writings

Taxonomy Classification		KEY WORDS Examples of Infinitives	Examples of Direct Objects
3.0	Valuing		
3.1	Acceptance of a Value (Belief)	to increase measured proficiency in, to increase numbers of, to relinquish, to specify	group membership(s), artistic production(s), musical productions, personal friendships
3.2	Preference for a Value (Commitment)	to assist, to subsidize, to help, to support	artists, projects, viewpoints, arguments
3.3	Commitment (Commitment to act)	to deny, to protest, to debate, to argue	deceptions, irrelevancies, abdications, irrationalities
4.0	Organization (Classification/ System)		
4.1	Conceptualization of a Value (Abstract, Symbolic)	to discuss, to theorize (on), to abstract, to compare	parameters, codes, standards, goals
4.2	Organization of a Value System (Philosophy)	to balance, to organize, to define, to formulate	systems, approaches, criteria, limits
5.0	Characterization by Value or Value Complex		
5.1	Generalized Set (Consistency)	to revise, to change, to complete, to require	plans, behavior, methods, effort(s)

Taxonomy Classification	KEY WORDS Examples of Infinitives	Examples of Direct Objects
5.2 Characterization (Inclusive of attitudes, beliefs, behaviors, and ideas)	to be rated high by peers in, to be rated high by superiors in, to be rated high by subordinates in	humanitarianism, ethics, integrity, maturity
	and	
	to avoid, to manage, to resolve, to resist	extravagance(s), excesses, conflicts, exorbitancy/ exorbitancies

EXERCISE

The following exercise is a culmination of a series of activities related to the sea. Preceding the use of the exercise, the children visited the beach to experience the sea by all their senses, sight, sound, smell, touch, and taste. The class collected samples of life found on the beach and in the shallow water. The sea water was studied under the microscope for evidence of life in the sea. We made food chains of marine life and discussed the geographic divisions of land and water on the earth. In addition, we saw films on the sea including one offered by the telephone company called THE SEA. Paintings of the sea by Winslow, Homer, Monet, and other artists were discussed. A recording of "The Sea" by Claude Debussy was played. We then were ready to diverge from the given material to establish individual impressions of the subject.

(The students are instructed to read the following article and discussion follows according to the questions listed on the other sheets).

FARMING THE SEA

Scientists tell us that life began in the sea. Some time, long ago, perhaps a billion years ago, in some shallow bay, when sun and heat were exactly right, elements combined to make life. The first living organisms were simple, but the sea provided moisture and salt, and oxygen and sunlight filtered through the moving water to sustain life.

As the millions of years passed, living organisms divided and multiplied and became more complex. Many living creatures and plants left the sea and flourished on the land.

Life not only began in the sea, but the sea sustains all life. It nourishes us spiritually and physically. It contains all the elements that life require.

In the twenty-first century scientists say that we must look to the sea for more help. Its vast area contains food for our rapidly increasing population and perhaps we shall return to the sea to settle new colonies.

There will be many problems to overcome in building a farming settlement in the sea because man is not capable of living in a marine environment. But man is used to adapting an environment to his needs and the sea will provide a great challenge.

by Nita Cohen

KNOWLEDGE

1.00 Knowledge

1.10 Knowledge of specifics

1.11 Knowledge of terminology

A. What is an element?

B. What is an organism?

C. What does sustain mean?

D. Tell me the meaning of a billion years. How does it compare to a million years?

E. Explain the term vast area.

1.12 Knowledge of specific facts

A. Why do scientists believe that life began in the sea?

B. From what do we believe complex organisms developed?

C. Why must we look to the sea for more help?

1.20 Knowledge of ways and means of dealing with specifics

1.21 Knowledge of conventions

A. How many paragraphs are contained in the article? How do you know?

B. How many sentences are contained in the article? How do you know?

1.22 Knowledge of trends and sequences

A. If you were president of the United States in 2025, how would you go about organizing an expedition to settle the sea?

B. What would be a major problem?

1.23 Knowledge of classification and categories

A. What problems relating to structure would be involved in making a city in the sea?

B. What problems relating to sustaining life would be involved in a city in the sea? (food, clothing, housing, waste management, etc.)

1.24 Knowledge of criteria

A. How did you decide what made up a problem?

B. Is there a list of priorities involved in the list of problems? If so, what are they?

1.25 Knowledge of methodology

A. What sort of thinking would you say went into the idea that a marine city would be a good idea?

B. Do you think other plans were considered?

1.30 Knowledge of universals and abstractions in a field

1.31 Knowledge of principles and generalizations

A. The last sentence states, "But man is used to adapting an environment to his needs and the sea will provide a great challenge." Do you think this is possible?

B. Why do you think this is possible?

1.32 Knowledge of theories and structures

A. What other challenges has man met during his presence on earth?

B. Has man always been fully successful in his response to the challenge of time?

INTELLECTUAL ABILITIES AND SKILLS

2.00 Comprehension

2.10 Translation

A. Pretend that two of you are members of the President's expedition to settle the sea. Through your dialog, show that you comprehend the needs and dangers of your undertaking.

B. By pantomime show how you would imagine the first few minutes after our arrival at the sight of the new marine city.

2.20 Interpretation

A. Which needs and dangers did the members of the expedition think were the greatest?

B. How could you tell which were most important to the actors?

2.30 Extrapolation

A. Once the settlement is established, there will still be difficulties facing the undersea farmers. What do you think they will be?

B. Why have you chosen these?

3.00 Application

A. What are the implications for normal living under the sea?

B. What difference do you think it will make in terms of daily activities?

4.00 Analysis

4.10 Knowledge of elements

A. In the article, some of the information could be called "statements of fact" and some could be called "statements of opinion." Give examples of each.

B. Why do you think your choices were as you stated?

4.20 Knowledge of relationships
- A. Why would it be necessary for man to adapt the environment to his needs?
- B. What effect does man's action have on the environment or would it be possible to reverse the relationship?

4.30 Knowledge of organizational principles
- A. How does the author of the article feel about settling in the sea?
- B. Give examples from the material to support your opinion.

5.00 Synthesis

5.10 Production of a unique communication
- A. Prepare a short poem (word picture) or sketch explaining how you feel.
- B. Would you like to share with us how you feel about life under the sea? What kinds of words express feeling?
- C. Could you use color, temperature, movement, etc., to show kinds of feeling?

5.20 Production of a plan or proposed set of operations
- A. If you wished to know more about the subject of Farming the Sea, how would you gather this information?
- B. How would you assemble the information you gathered?

5.30 Derivation of a set of abstract relations
- A. Read the last paragraph of the article. Can you explain it in your own words?
- B. Can you explain the relationship between the introductory sentence and the conclusion of the paragraph?

6.00 Evaluation

6.10 Judgments in terms of internal evidence
- A. Why is it sensible for man to look to the sea for help in solving his problems?
- B. Has the sea provided a solution to problems that have beset man in past centuries?

6.20 Judgments in terms of external criteria
- A. Suppose we could not harvest additional food from the sea. What might happen?
- B. What alternatives are there to founding settlements under the sea to solve the problems of today?

COGNITIVE-AFFECTIVE INTERACTION MODEL *

The structure characterizes an interrelationship between one or more strategies employed by the teacher (Dimension 2), across the various subject matter areas of the curriculum (Dimension 1) in order to elicit a set of four cognitive and four affective pupil behaviors (Dimension 3). What the teacher does or media she or he uses is strategy, but how the pupil thinks or feels is process; and both are related to subject matter content.

Dimension 1 lists subject matter areas of a conventional elementary school curriculum. However, it is felt it may be possible to substitute subjects from any other grade level, including high school and college, in this dimension.

Dimension 2 initially listed twenty-three styles or strategies in a prototype model which teachers can employ in their classroom teaching. Upon extensive field testing of the model, this list of strategies has been reduced to eighteen, which avoided a great deal of overlap between some strategies.

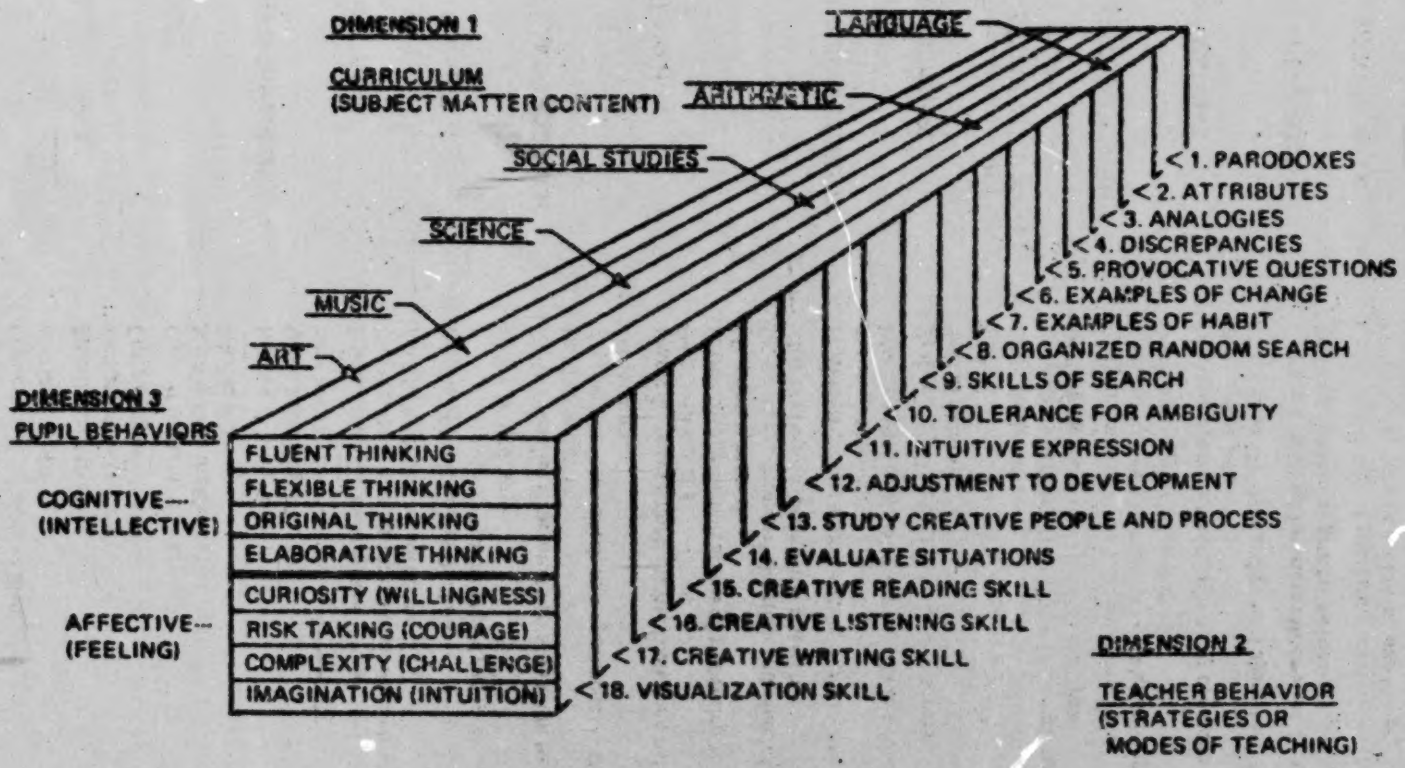
These have been devised empirically from many studies of how all good teachers operate implicitly in the classroom. Teaching styles or strategies become a means, through subject matter content, toward an end for fostering eight thinking and feeling pupil behaviors. As one considers these eighteen teaching strategies, which can be appropriately applied across all subject matter areas, a vast number of combinations for learning become apparent.

Dimension 3 consists of eight processes deduced from theoretical studies of how children think and feel divergently. These divergent production factors are certainly most crucial when encouraging a child's creative potential, but have received less attention or have been commonly ignored in the traditional curriculum and classroom.

From Williams, Frank E., Total Creativity Program for Individualizing and Humanizing the Learning Process. Englewood Cliffs, N.J.: Educational Technology Publications.

A Model for Implemanting Cognitive-Affective Behaviors in the Classroom

D1⇄D2→D3



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DIMENSION 2
Teacher Behaviors (Strategies)

NO. 1 -- PARADOXES	Common notion not necessarily true in fact Self-contradictory statement or observation
NO. 2 – ATTRIBUTES	Inherent properties Conventional symbols or identities Ascribing qualities
NO. 3 – ANALOGIES	Situations of likeness Similarities between things Comparing one thing to another
NO. 4 – DISCREPANCIES	Gaps of limitations in knowledge Missing links in information What is not known
NO. 5. – PROVOCATIVE QUESTIONS	Inquiry to bring forth meaning Incite knowledge exploration Summons to discovering new knowledge
NO. 6 – EXAMPLES OF CHANGE	Demonstrate the dynamics of things Provide opportunities for making alterations, modifications, or substitutions
NO. 7 – EXAMPLES OF HABIT	Effects of habit-bound thinking Building sensitivity against regidity in ideas and well-tried ways.
NO. 8 – ORGANIZED RANDOM SEARCH	Using a familiar structure to go at random to build another structure An example from which new approaches occur at random.
NO. 9 – SKILLS OF SEARCH	Search for ways something has been done before (historical search) Search for the current status of something (descriptive search) Set up an experimental situation and search for what happens (experimental research)
NO. 10 – TOLERANCE FOR AMBITGUITY	Provide situations which puzzle, intrigue, or challenge thinking Pose open-ended situations which do not force closure
NO. 11 – INTUITIVE EXPRESSION	Feeling about things through all the senses Skill of expressing emotion Be sensitive to inward hunches or nudges
NO. 12 – ADJUSTMENT TO DEVELOPMENT	Learn from mistakes or failures Develop from rather than adjust to something Developing many options or possibilities
NO. 13 – STUDY CREATIVE PEOPLE AND PROCESS	Analyze traits of eminently creative people Study processes which lead to problemsolving, invention, incubation, and insight
NO. 14 – EVALUATE SITUATIONS	Deciding upon possibilities by their consequences and implications Check or verify ideas and guesses against the facts
NO. 15 – CREATIVE READING SKILL	Develop a mind-set for using information that is read Learning the skill of generating ideas by reading
NO. 16 – CREATIVE LISTENING SKILL	Learning the skill of generating ideas by listening Listen for information allowing one thing to lead to another
NO. 17 – CREATIVE WRITING SKILL	Learning the skill of communicating ideas in writing Learning the skill of generating ideas through writing
NO. 18 – VISUALIZATION SKILL	Express ideas in visual forms Illustrating thoughts and feelings Describing experiences through illustrations

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DIMENSION 3

Pupil Behaviors

Behavior	Meaning
COGNITIVE – INTELLECTIVE	
FLUENT THINKING To think of the *most* --	Generation of a quantity Flow of thought Number of relevant responses
FLEXIBLE THINKING To take *different* approaches --	Variety of kinds of ideas Ability to shift categories Detours in direction of thought
ORIGINAL THINKING To think in *novel* or *unique* ways --	Unusual responses Clever ideas Production away from the obvious
ELABORATIVE THINKING To *add on* to --	Embellishing upon an idea Embroider upon a simple idea or response to make it more elegant Stretch or expand upon things or ideas
AFFECTIVE – TEMPERAMENT	
RISK TAKING To have *courage* to --	Expose oneself to failure or criticisms Take a guess Function under conditions devoid of structure Defend own ideas
COMPLEXITY To be *challenged* to --	Seek many alternatives See gaps between how things are and how they could be Bring order out of chaos Delve into intricate problems or ideas
CURIOSITY To be *willing* to --	Be inquisitive and wonder Toy with an idea Be open to puzzling situations Ponder the mystery of things To follow a particular hunch just to see what will happen
IMAGINATION To have the *power* to --	Visualize and build mental images Dream about things that have never happened. Feel intuitively Reach beyond sensual or real boundaries

II. AN OVERVIEW OF CURRICULUM AND PROGRAM DESIGNS FROM A SAMPLING OF CONNECTICUT SCHOOL DISTRICTS

Avon Public Schools
Avon, Connecticut

AVON MIDDLE SCHOOL GIFTED PROGRAM

Curriculum

The Avon Middle School Gifted Program is an independent study program, so the curriculum depends on what students decide to do and comes from many sources. There are some things which we plan and teach and we limit our list to those materials.

1. We do teach the basic skills for doing media: slides, filmstrips, transparencies, 8mm movies and video tape. Among the books we have found most useful are:

   a. Make Your Own Animated Movies, Yvonne Anderson (Little, Brown & Co.: Boston, 1970)

   b. Fundamentals of Teaching with AudioVisual Technology by Carlton Erickson and David Curl (MacMillan Co.: N.Y., 1972)

   c. Filmmaking for Children, Arden Rynew, (Including Motion Picture Production Handbook) (Pflaum/Standard, 1971)

   d. Children As Film Makers, John Lidstone and Don McIntosh (Van Nostrand Reinhold Co.: N.Y., 1970)

2. We use a variety of materials and activities to stimulate creative and higher level thinking skills. We adapt ideas and relate them to projects students are engaged in, but we do exercises to focus on specific aspects. (See enclosed Guidelines)

Our materials come primarily from Renzulli, Parnes, Torrance, Osborn, Williams, and Teaching for Thinking by Raths, Wasserman, Jonas and Rothstein, (Charles E. Merrill: Columbus, 1967).

3. We do some values clarification exercises from Simon and others, and we use some of their ideas in relation to various materials. We also use some decision-making material, greatly adapted from Deciding by H.B. Gelatt, Barbara Varenhorst and Richard Carey, College Entrance Examination Board: N.Y., 1972.

Avon, Connecticut

GUIDELINES FOR DOING A REPORT IN ROOM 22

TOPIC

Even though the general area is assigned by your teacher, you are usually free to decide what your emphasis will be. What part of the topic interests you?

BUT, before you decide.....

EXPLORE

the resources. Look in a variety of places. What are some important parts of the topic? Get a general idea of what the topic includes. What kinds of possibilities interest you? What things might you do that would be yours--that would say something you want to say?

Talk over the possibilities with a teacher.

(This part of your report is very important and takes some good thinking. Divergent thinking and concept formation are two names for what you are doing. Collecting and organizing data and hypothesizing are two other names. So--if you think you've been working--you have!)

DECIDE

on your topic and on how to present it.

Talk with a teacher about possibilities--slides and tape, movie (iconographic photography, animation, documentary, etc.), videotape, model, mobile, diorama, posters, play, radio broadcast, etc. You really have to think verbally and visually.

(convergent, critical, and creative thinking, please!)

PLAN

your report--the words and the visuals.

1. What is your core idea? Summarize in two or three sentences.

2. Outline or list your main points. Check with teacher.

3. Locate or create appropriate visual material.

(Your thinking skills are synthesis, analysis and interpretation).

Avon, Connecticut

PREPARE

Verbal and visual materials in appropriate form. Get planning sheets.

Have teacher sign the sheet.

Do the report.

(Problem solving, interpretation)

PRESENT THE REPORT

EVALUATE - The student, teachers, and other students evaluate in terms of the purpose of the report.

DECISIONS WHICH NEED TO BE MADE IN ORDER TO DESIGN A SIMULATION

1. Objectives. Decide what you expect the simulation to do. It could teach facts, bring out "facts" of a social or moral nature, etc.

2. Develop a model. Formulate a model of how the variables in the real life situation are functionally related. In other words, you should consider what are the givens in the situation, what are the nature of the interactions, and what are the outcomes.

3. How many participants do you intend to involve in the simulation?

4. How much time do you expect the simulation to occupy?

5. The process and procedures.

   5.1 Decisions have to be made about the roles to be portrayed.

   5.2 You must consider how all the players can be kept fully involved during the course of the simulation.

   5.3 Decisions will have to be made about the setting to be used and what background information you must provide. (scenario)

Avon, Connecticut

5.4 Specify the ways decisions are to be made in the game, i.e., by individuals, groups, a combination of both or by chance. How are the players to be informed of the decision?

5.5 More specific decisions have to be made about each player's aims and objectives (e.g., wealth, power, advantage, avoidance), and, where if necessary, his resources (e.g., physical appearance, social background, attitudes, knowledge, etc.)

5.6 What remains are final decisions about the rules of play. In some simulations not all are formally delineated.

6. Fill in the format sheets. (See below)

7. Present the simulation to the group.

FORMAT

Write up the game/simulation according to the format given below:

Name

Objectives

Overview

Number of participants

Amount of time

Equipment or special materials

Description of the process and procedures.

Bea White

Avon, Connecticut

MAILING ADDRESSES OF PUBLISHERS AND DISTRIBUTORS OF GAMES AND SIMULATIONS

1. Abt Associates, Inc., 55 Wheeler Street, Cambridge, Mass. 02138
2. Academic Games Associates, 430 East 33rd Street, Baltimore, MD 21218
3. Avalon-Hill, 4517 Hartford Rd., Baltimore, MD 21214
4. Center for Simulation Studies, 634 No. Grand Ave., St. Louis, MO 63103
5. Didactic Systems, Inc., Box 500, Westbury, New York 11590
6. Dynasty International, 815 Park Ave., New York, N.Y. 10022
7. Games Research, Inc., 48 Wareham Street, Boston, Mass. 02118
8. Herder & Herder, 232 Madison Ave., New York, N.Y. 10016
9. Interact, P.O. Box 262, Lakeside, Calif. 92040
10. International Learning Corp., 3233 S.W. 2nd Ave., Ft. Lauderdale, Florida 33315
11. Instructional Simulations, Inc., 2147 University Ave., St. Paul, Minnesota 55114
12. MacMillan, 866 Third Ave., New York, N.Y. 10022
13. Psychology Today Games, P.O. Box 60279, Terminal Annex, Los Angeles, California 90080
14. Scott, Foresman & Co., Glenview, Ill. 60025
15. Science Research Associates, 259 E. Erie Street, Chicago, Ill. 60611
16. Simile II, P.O. Box 1023, 1150 Silverado, La Jolla, Calif. 92057
17. Simulation Systems Program, Teaching Research, A Division of the Oregon State System of Higher Educ., Monmouth, Oregon 97361
18. University Associates Press, Box 615, Iowa City, Iowa 52240

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19. Urban Systems, Inc., 1033 Massachusetts Ave., Cambridge, Mass. 02138

20. Western Publishing Co., 850 Third Ave., New York, N.Y. 10022

Canton Public Schools
Collinsville, Connecticut

The students in the Independent Study Program for the Gifted at Canton High School choose to pursue an area of interest to them that would ordinarily not be available in the regular school day. These activities are typically career-oriented, art-oriented or academically-oriented.

Each student is released from classes for a specified length of time each week. They have an adult sponsor from the high school or from the community who advises them and helps them with their projects. Many students are student-interns at local hospitals, schools, television studios, newspapers. Other students are apprenticed to local artists or take lessons privately to supplement the art and music programs in the high school. The academic projects include monitoring the rivers and streams in conjunction with the conservation commission, doing a statistical survey of projected school enrollment, opening a greenhouse for the middle school, studying the effect of vitamins on seeds, etc.

The adult advisor and the student do separate evaluations of the work each marking period. At the end of the year, during the Open House, the students demonstrate and display their work.

Colchester Public Schools
Colchester, Connecticut

An enrichment program based on communication and the language arts for students in grades two through four. Classes meet for one hour per week. The second grade meets twice per week and the others, three times.

The program is designed to foster independent learning, to expand knowledge and interests, and to develop higher level mental processes.

The curriculum contains creative writing, foreign languages, and literature. There is also an effort to coordinate study in other subject areas. A wide variety of instructional techniques are employed. They include forums, media utilization, role playing, school newspaper, school radio station, adaption of famous plays, and educational games.

Darien Public Schools
Darien, Connecticut

A semi-separation program for grades one through six which meets once a week in each of the six elementary schools for one and one half hours per week. Class size varies from six to twelve children. Meetings are held in areas available at the time.

The Darien program is an interest-based program fostering creative expression for the Terman-type child. Three areas of development are stressed:

1. Effective and imaginative communication based on the child's interest using media, art and language arts.

2. Understanding factors which can limit man's intellect by investigation into heredity, emotions, perspective, rational vs. irrational thinking, etc.

3. Development of a healthy self-concept using self-reflective activities and expressing learning through original art and media creations.

Independent research with exposure to reference resource materials is stressed as well as class and personal evaluation of work and of self.

Selection of students is based on a minimum IQ of 138, Achievement Test results in the 98, 99 percentile range, scores achieved on the Scale for Rating Behavioral Characteristics of Superior Students developed by Joseph S. Renzulli/Robert K. Hartman and teacher-principal recommendations.

Visits to the Darien program are welcomed and any materials used are available upon request.

Barbara Harrington, Teacher

East Haddam Public Schools
Moodus, Connecticut

Elements of Life: Earth, Air, Fire, and Water

A Program for Gifted, Talented, and Creative Students in Grades 4-8 in East Haddam

The program, The Elements of Life: Earth, Air, Fire, and and Water, was conducted for four weeks during July. Each one of the four weeks had as its focal point one of the four elements. The program is a series of learning opportunities in the fields of Science and Language Arts, with related Art and Music experiences.

The offerings for the students included individual, small group, and large group instruction in the following areas:

Computer science	Puppetry
Rocketry	Drama
Geology	Creative Writing
Ecology	Photography
Electronic circuitry	Electricity

To supplement these areas audio-visual equipment and material from Project Le[illegible], a video-tape machine, a darkroom, simulation games, field trips, a teletype computer, pottery - enameling kiln, and lapidary machine were used.

Two field trips were planned to Talcott Mountain Science Center in Avon for student exploration in geology, ecology, physics, and weather.

East Haddam, Connecticut

Requirements:

Each participant kept an anecdotal record of daily events and personal reaction to the program.

Attendance on a regular basis ensured optimum benefit.

There were five major areas utilized in accomplishing objectives:

A. Field trips - there were a total of seven field trips.
Hammonasset Nature Center - to study sea and shore life, both plant and animal.
Yankee Atomic Power Plant - to see uses for atomic energy in a viable situation.
Talcott Mountain Science Center - a total of four trips to study astronomy, laser beam application, pond life, and meteorology.
Gamelon Society - to listen to and play Indonesian Music and musical instruments. This trip was the only trip not in the realm of science.

B. Art - The first two weeks the art program focused on ceramics, development of a clay object on a potter's wheel, firing and glazing, and photography. The last two weeks the art program focused on silk-screening techniques and successful silk-screening of tee shirts.

C. Music - the music program was improvisation with percussion instruments. Many instruments were made by the students or teacher and resulting music was taped.

D. Math and Science
Computer - we rented a teletype computer from Wesleyan University through R.C.A. and used it extensively. Students learned how to program in BASIC and operated the computer for mathematical computation, probability studies, language, and science simulation games.
Rocketry - approximately 20 students designed, constructed, and aerodynamically tested rockets.
Electronics - students learned how to use basic tools of electronics, i.e., soldering gun, learned how to "read" a schematic circuit, diagram, and picture a circut.

E. Language Arts - students learned how to communicate better with peers in both writing and speaking.

East Haddam, Connecticut

V.T.R. - students learned how to operate the V.T.R. on loan from Project Learn and recorded plays, skits, and original skits, short plays, and scenes.
Writing - some work was done in descriptive composition work, but the majority of written work went into dialogue and scene direction with the V.T.R.

East Lyme Public Schools
East Lyme, Connecticut

The first two years of the East Lyme program dealt mainly with projects of student interest and naturally covered all areas of their curriculum.

The following year's program revolved around the area of social science. SRA's "Social Science Investigation" was used as a resource for their work.

This year (1973-74) the text "People and Their Environment", published by J.G. Ferguson Publishing Company, Chicago, Illinois, is being used in the program. However, in all work, student interest plays a major role in determining individual as well as group projects.

Ellington Public Schools
Ellington, Connecticut

A program at the elementary through junior high school level which includes numerous programming alternatives. The program is designed to introduce children to a wide variety of subject areas and to provide opportunities for furthering their present interests.

The curricular objectives are: (1) to introduce the forms of drama, (2) to study and create poetry, (3) to promote appreciation for music and life styles of Great Composers, (4) to foster interest in art, (5) to inquire into the basis of mythology, (6) to develop mathematical thinking and experimentation, (7) to introduce the study of archaeology, (8) to introduce computer science and its application, (9) to introduce photography, (10) to introduce the principles of electronics and (11) to develop methods of inductive thinking and experimentation in science.

The modes of instruction are determined by the nature of the subject matter. Experiences are provided through special laboratories, field trips, guest lecturers, independent study, videotapes, and simulation games. Students also have an opportunity to participate in the Talcott Mountain Science Center.

Ellington, Connecticut

PROGRAM FOR ACADEMICALLY TALENTED CURRICULUM
Ellington
June, 1973

I. FINE ARTS

A. Drama--to introduce the children to the forms of the drama.

1. Teach related terms for structure.
2. Show movie "What's In A Drama."
3. Practice or "role play" the structure.
4. Committee work to create a drama.
5. Channing Bete "About Drama."

B. Poetry--To introduce the children to types of poetry; to encourage and create opportunities to motivate children to write or record their feelings poetically. Resource people are used in this area.

C. Music--To promote appreciation for the music and life styles of Great Composers.

1. To receive instruction in the rudiments of composition. Resource--Ellington Music Department.
2. To apply music to other areas of content.
3. To explore science of Electronic Music.
   a. Field trip for children for 2 or more sessions. Use Ellington Music Department as resource.

D. Art--To seek out and develop the interest of the children.

1. Through movies on Art.
2. Through demonstrations.
3. Through field trips.
4. Through local resources.
5. Through "hands-on" experimentation.
6. Pottery
   a. Introduce basic techniques through demonstration and experimentation.
   b. Resources
      1) Norton Berkowitz, High School Art Dept.--6 one-hour sessions; children instructed by available resource people.
      2) Stan Blonk, Tolland--demonstrates pottery-making to all students followed by "experiment" session for all those interested.

Ellington, Connecticut

7. Marionettes and Puppetry
   a. Introduce children to the history of marionettes and puppets; to make puppets or marionettes; to learn how to operate same.
   b. On independent study to produce an original play using characters created or to dramatize a chosen piece of literature.

E. Mythology--To introduce children to the bases of mythology--concentrating on the Greek-Roman.

1. Through use of Channing-Bete materials "About Mythology."
2. Through Edith Hamilton's Mythology.
3. Through available audio-visuals.
4. To create on an independent study basis, a modern myth.

F. Library Science

1. What is the library?
2. How is it set up?
3. Card catalog
   a. Dewey decimal system
4. Readers' Guide to Periodicals
5. Independence in the Library is stressed inasmuch as the children are free to use it at any time when one of the librarians is in the building to admit them.

G. Mathematics

1. Attribute Games - E.S.S. Materials--To encourage and develop the process of logical thinking and the scientific and inductive approach to learning through experimentation.
   a. A Blocks
   b. Color Cubes
   c. People Pieces
   d. Creature Cards
   e. Mirror Cards
   f. Geo Blocks
   g. Geo Boards

2. Cuisenaire Rods--to introduce the children to another way of approaching and experimenting in mathematics through the use of colored rods; to proceed on a more individualized basis to higher forms in math.

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H. Archaeology--To introduce the children to the science and its implications in the history of mankind.

1. See movie on "Archaeology."
2. Do "Trash Can" simulation; Video-tape "assembly" and "dig."
3. Culminating activity--go out for "a dig."
4. Formulate and complete narrative report.
5. Open up to independent interest--provide resources for same.

I. Computer Science--To introduce the children to the use of the computer and its applications for them.

1. How a computer works
   a. simple flow charts on making a phone call.
   b. definitions of Basic Language needed to do computations.
   c. writing programs for the computer in Basic.
   d. testing programs for accuracy.
   e. familiarity with keyboard.
2. Games and the computer
   a. using games in science, social studies, etc., to provide for individual interests.
   b. providing drill and testing programs for individual interests and needs.
   c. using programs as a motivation and as an appreciation of the broad applications of Computer Science.

J. Photography and Camera--To introduce the children to the science of the camera and its applications for them.

1. How a camera works
   a. Construct pinhole camera from a can.
   b. Take pictures with the pinhole camera.
   c. Kodak instamatic - use and care of.
2. How to develop negatives
   a. Chemicals used and order of use
   b. Loading the tank
   c. Measuring and temperature of chemicals
   d. Timing of development
   e. Washing
3. How to print pictures
   a. Parts of enlarger and their use
   b. Paper and its care
   c. Placing negative in carrier
   d. Timing

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e. Safe light
f. Chemicals and order of use
g. Washing
h. Drying prints

4. How to apply photography to independent study
a. Science
b. Social Studies
c. Fine Arts, etc.

K. Electronics

1. Identification of the basic electronic parts with a brief description of how they operate.
a. Construct a variety of circuits that demonstrate various electrical principles on the Heathkit Electronic Workshop.
b. Learn the Morse Code and practice sending messages in code.
c. Construct some electrical kits such as: Analogue computer, 2-transistor radio, code key, battery replacer, burglar alarm, treasure locator, etc.

L. Science--To expose the children to the methods of inductive thinking and to experimentation.

1. Resource: Talcott Mountain Science Center for Student Involvement.
a. Ecology
b. Astronomy
c. Meteorology
d. Geology
e. Radio--electronics
2. Scheduling is arranged so that both local and mountain resources are used to the best advantage.
3. Saturday Scholarship Program is available for outstanding students.
a. "Horizons Unlimited" and "The Sky is the Limit" are independent study programs for academically gifted students in grades 4-6 and 7-12 respectively. The programs meet on Saturdays at the Talcott Mountain Science Center for Student Involvement in Avon, Conn. Under the guidance of Science Center staff, students investigate various problems in environmental, earth and space sciences. Students learn to operate many of the Center's scientific instruments and use this equipment in their research. The "Horizons" program, for the most part, is a series of brief studies following problems posed by students or instructors. An older student (in "The Sky

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is the Limit") chooses a single topic of investigation for the 15-week program, plans the method of attack, carries out the work as far as possible on his own, and writes a summarizing report. Staff members assist in all stages of the student's work, but do not dictate what to do. "Horizons Unlimited" and "The Sky is the Limit" are prior approved programs under Public Act 627 for Exceptional Children. The Avon Public Schools is the sponsoring school district.

M. General Science Materials

1. Concepts in Science
   a. 100 Invitations to Investigate
2. E.S.S. Material
   a. Kitchen Physics
   b. Gases and Airs
   c. Bones
   d. Mapping
   e. Structures
   f. Daytime Astronomy
   g. Heating and Cooling
   h. Mealworms
   i. Geo blocks
3. Biology
   a. Dissecting Kits
   b. Material for same

N. Rationale for "Gaming"

1. Simulation and logic games provide children with an excellent means to role-play different behaviors in a wide variety of disciplines. These games are usually self-motivating and have stimulated many students to investigate further in an independent study project.

   a. Simulation Games
      1) Napoli (National Politics)
      2) Sunshine (Racial problems)
      3) Bad Trip (Drug Scene)
      4) Convention (Presidential Nomination)
      5) Community (Economic Decision)
      6) Banking "
      7) International Trade "
      8) The Market "
      9) The Firm "
      10) The National Economy "
      11) Collective Bargaining"
      12) Budget (Local Government)

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13) Disunia (21st Century paralleling 1781-89)
14) Silver Lake (Local Government)
15) Consumer (Finance-credit)

b. Wff 'N Proof Games of Logic (The Think Tank)
1) Propaganda
2) On-sets
3) Tri-Nim
4) Equations
5) Configurations
6) Tac-Tickle
7) Quik-Sane
8) Wff
9) Basis
10) Wff 'N Proof
11) Mr. President
12) Euro-Cards
13) Ameri-Cards
14) Queries and Theories
15) Strange Bedfellows

c. 3M Bookshelf Games--These games deal with strategy and tactics in a variety of disciplines.
1) Points of Law
2) Acquire
3) Image
4) Breakthrough
5) Ploy
6) Foil
7) Facts in Five
8) Mr. President
9) Smog (Air Pollution Game)
10) Chaos (Memory-Strategy)
11) Square-Off (Strategy)
12) Landslide (Politics)
13) Dealers' Choice (Used-car dealing)
14) Masterpiece (Art appreciation)
15) Qubic (3 dimensional Tic-Tac-Toe)
16) Split-Level Aggravation
17) R.P.M. (Scrabble-type word game)
18) Soma

Farmington Public Schools
Farmington, Connecticut

Research Report on the Counseling Project for Gifted Secondary Students

Background. The theoretical basis for the Farmington Program for Gifted and Talented has come from the self-actualization theory of the growth psychologists such as Maslow, Combs, and Carl Rodgers.

Self-actualization is an individual's need to fulfill his human potential--to become what he has the potential to become--to fulfill his unique prepotencies.

There has been consistent reference to five variables related to self-actualization in the literature.

1. SELF-ACTUALIZING PEOPLE HAVE A STRONG, POSITIVE SELF-CONCEPT.

   They have learned through successful growth experiences that they are capable, liked, worthwhile humans. They have bounced their images off of others and their personal radar screens tell them they are good and worthy persons.

2. SELF-ACTUALIZING PEOPLE ARE CREATIVE. Their minds have been trained to find unique solutions to problems--whether these problems are interpersonal or concrete. They can cope with change.

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3. SELF-ACTUALIZING PEOPLE HAVE AN INTEGRATED VALUE SYSTEM.

This value system is based upon human values--the worth of others. Their lives are lived in keeping with their values. They have a strong sense of right and wrong, yet the value system is open and new concepts can be tested and, if worthy, integrated.

4. SELF-ACTUALIZING PEOPLE ARE RECEPTIVE TO NEW EXPERIENCES.

They are open rather than close-minded. They are willing to take reasonable risks.

5. SELF-ACTUALIZING PEOPLE ARE GROWTH ORIENTED. They are conscious of the discrepancy between what they are and what they can be and are motivated toward closing those gaps.

Guidance counselors in the secondary schools are well-suited, through their training, to take a central role in helping students toward self-actualization. They have a background in psychology and child development and group counseling techniques.

The Farmington Program for Gifted and Talented is based upon the proposition that a planned group counseling program with specific objectives and activities can help students to become self-actualized by:

Farmington, Connecticut

1) improving their self-concept.

2) improving their creative abilities.

3) assisting them in developing an integrated value system.

4) developing a growth orientation through raising their vocational aspirations.

5) assisting them to become more open-minded and receptive to new experiences.

Methodology. Eighty-five students in grades 7 through 11 having an I.Q. of 125 or greater were identified. Forty-five students were selected at random to form the treatment group. The control group consisted of the remaining forty pupils. Each group was administered the following tests in the fall of 1971:

The Torrance Test of Creativity

Figural Fluency - Subtest
Figural Flexibility - Subtest
Figural Originality - Subtest
Figural Elaboration - Subtest
Verbal Fluency
Verbal Flexibility
Verbal Originality

The Tennessee Self-Concept Scale

The Pupil Control Ideology Scale (adapted)

The Ohio Vocational Aspirational Scale

The Rokeach Dogmatism Scale

Regular biweekly group counseling sessions were established for the treatment group. The sessions were designed specifically to achieve program goals. Individual counseling sessions and out-of-school group activities were outgrowths of

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the group sessions.

Post tests were administered at the end of the school year to both the treatment group and the control group.

Findings. Four research questions were asked.

1. Is there an overall difference between the treatment group and the control group with respect to their scores on the eleven tests or subtests?

   To determine this, a statistical technique called the multivariate analysis of variance was used. This analysis provides an optimum method of discriminating between the test scores of control and experimental students.

   The answer was yes. There was a significant difference between the test scores of the two groups. The difference was significant beyond the .01 level. This simply means that you can be very confident that the magnitude of difference was so great that it would happen less than one time in one hundred by chance.

2. What contributed to this difference in favor of the treatment group who had the group counseling sessions?

   An examination of the analysis showed that the scores on the three verbal subtests of the Torrance Test and the Tennessee Self-Concept scores made the major contribution to the difference between the

groups. These four tests showed a significant difference in favor of the treatment group. Two other tests were directional but not significant.

3. Was there a difference between the boys' and girls' test results?

No. The boys and girls in the treatment group did equally well.

4. Does age or grade level make a difference?

No. The program works as well with older students as it does for younger students.

Creativity, self-concept, growth orientation, and value integration can be significantly improved in secondary students through a planned program of group counseling.

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Inservice Report on the Counseling Project for Gifted Secondary Students

Mr. Keeler has conducted over 30 inservice sessions. Each session was experiential and competency developing, that is, workshop sessions were lab-oriented and demanded active participation on the part of each teacher. Teachers and counselors did not leave these sessions merely knowing something about a new technique or teaching strategy. They attained some degree of competency in doing whatever skill was presented. A list of the types of groups he met with includes:

New teachers

Special Service Personnel

Guidance Counselors

Secondary school departments

Elementary school teams

Resource Teacher groups

School faculties

Individual teachers

Most sessions were concluded with a brief written evaluation by each participant.

In addition to the inservice meetings, Mr. Keeler made the following service contacts:

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Parent-Teacher Groups - Three Sessions. Two had an average of 40 parents and teachers and the third session, lasting only 30 minutes, had over 200 parents and teachers participating.

Teacher Convention Days - Two sessions, with an average of 30 teachers per session.

State Department Workshop for the Gifted - Four large group sessions with an average of 50 teachers, counselors and administrators per session.

Recommendation

Based upon the findings in the research aspect of this project, it is recommended that the control group students and a limited number of students not in the control group (not to exceed 15) be incorporated into the group counseling aspect of the program.

This would be accomplished in such a manner that existing counselor-counselee relationships would not be harmed and that their school program would not be unduly upset.

The inservice component of the project would be continued.

William H. Streich
Assistant Superintendent

Greenwich Public Schools
Greenwich, Connecticut

The curriculum of the Gifted/Talented Program of Greenwich, Connecticut is based on supporting, encouraging and helping to develop interest areas of the gifted and talented students identified to participate in the program. The workshop type program is open-ended, and the various projects, interest contracts, and activities in which the students are involved may be initiated in response to a student's enthusiasm or curiosity, a teacher's suggestion, materials available at the workshop, or community resources. Joint student/teacher planning is done through use of the contract system, and the plans often include a field trip or contact with someone in the community who is skilled in the interest area as well as the use of films, books, kits, and often art materials to display and communicate learnings.

Two special emphases of the program, developing independent study skills and developing productive divergent thinking skills, receive part of their focus through the use of learning centers. These learning centers deal with topics such as chemistry, ecology, electricity and magnetism, nutrition, literature, creative thinking, creative writing, career exploration, manual dexterity, affective education, problem-solving techniques, and puzzles and logic. They are often teacher developed and are designed so that a student may work on the activities independently. Additional structure is

Greenwich, Connecticut

given to the curriculum through the use of weekly planning sheets for each student's schedule of activities for the week.

Among the materials used as a part of the curriculum are the following:

New Directions in Creativity

Manuals: Mark 1, Mark 2, Mark 3
by Joseph S. Renzulli

Silver Burdett Student Laboratory Programs

Electricity and Magnetism
Mechanics
Wave Motion

SRA Work Kit

Widening Occupational Roles

SECRETS

Affective Education Program
by Dr. Maxwell Maltz

The Productive Thinking Program, A Course in Learning to Think by Covington, Crutchfield, Davies, and Olton

Avalon-Hill Bookcase Games

The Stockmarket Game
Origins of World War II: Game of International Politics
Word Power

3M Bookshelf Games

Stocks and Bonds: The Game of Investments
Acquire: High Adventure in Finance
Image: The Game of Personality Profiles
Mr. President: Political Campaign and Election Game
Challenge Bridge: A New Dimension in Duplicate Bridge
Feudal: The Game of Siege and Conquest
Facts in Five: The Game of Knowledge

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Psychology Today Games

Blacks and Whites: The Role Identity and Neighborhood Action Game
The Cities Game: Urban Tension & Negotiation

Digi-Comp I

Operating binary digital computer in plastic.

Emily Stewart, Teacher

Hamden-New Haven Cooperative Education Center

Independent Study Program

History

The Independent Study Program for the Talented and Gifted and potentially Talented and Gifted originated in 1967 as a design for high school education. It uses the student's interests as a springboard for exploration of a subject. After four years of refinement of this model, the program was introduced into the four separate area high schools where it currently flourishes.

Program Objectives

The Program seeks to: focus interests, goals and premises, guide the student in critical analysis, extrapolation and synthesis of findings, foster creativity and originality and help the student to recognize that failures, frustrations, setbacks and successes are a part of the learning process.

The Program strives to develop: humility and open-mindedness to learning by instilling in the students the understanding that one question leads to more, inventiveness in problem solving, resourcefulness, an ability for self-evaluation, and an appreciation of the emotional involvement in the learning process.

Selection of Students

Students volunteer for the Program and participate in

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two interviews, one with the Coordinator and one with the teacher-advisor. The interviews assess the depth and diversity of the student's interests, the particualr interests appropriate for pursuit in the Program, the student's ability to work on these interests independently with guidance and resource help, and the intellectual or creative potential of the student.

In addition to the interviews, the judgment of guidance counselors and teachers weigh heavily, especially in regard to students with potential. Standardized tests and academic records provide final reference, especially for students with demonstrated talent.

Method of Instruction

The Program is based on conference appointments. With the exception of basic math and science courses, teacher-advisors meet with their students once or twice a week to discuss their work. More contact hours with teacher-advisors are often necessary in science and math. Without a classroom structure, there is no classroom curriculum. The advisor is responsible for guiding students in the selection of resources according to the students' interests and needs and for encouraging the students' resourcefulness. Subject-advisors are available in all major disciplines.

Guidelines for Resources

1. Paperbacks offer up-to-date material available at relatively low cost. The books can be kept for a longer

period of time than library books and can circulate among students with similar interests. Student and staff browsing in paperback bookstores often inspires ideas for materials for student projects.

2. Students use their school and local community libraries and seek the resource help of the reference librarians.

3. Materials are sources highly recommended for any given field. Although interest and comprehension levels are significant, sources are not selected according to a secondary school level.

4. Suggestions for materials occur throughout the year depending on where the student's curiosity, interest, comprehension and academic needs lie at a certain time. The student and advisor create the curriculum continuously.

5. Resources are tailored to each student's questions. Students may pursue similar general topics, for example, urban education; however, the resources suggested reflect the curiosity of an individual student at a certain time.

6. Students' materials may bear on projects for symposium papers or contests requiring original projects.

7. Students' materials may be organized on the basis of a core curriculm approach for all subject areas.

8. Materials are designed to enhance excitement of learning, encourage further questions, establish intellectual self-confidence and bring satisfaction in achieving mastery in a specialized area.

9. Specialists in fields relating to the students' topics are consulted whenever needed.

Guidelines for Use of Materials

Students select the material from their readings pertinent to their interests. The advisor may:

1. suggest key points and questions on which to focus

2. help students to clarify, analyze and organize certain themes, concepts and facts for comprehension and substantiation of basic premises

3. stimulate the students to interpret, extrapolate and draw conclusions based on their perceptions

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4. foster student thinking in original and creative problem-finding, problem-solving or expression or ideas

5. help to integrate the thinking and feeling processes to insure meaningful quests

6. guide the student in finding his/her own style and expression of learning

7. guide the student in consideration of other resources in the community

Jean Blanning

Hamden-New Haven Cooperative Education Center

Independent Study Program

Bibliographies

In one of the participating high schools, several students select studies bearing on the Black experience. Six independent study topics, with the books useful to the projects, are listed.

An exception to the creation of curriculum in the Independent Study Program is in the junior year American history independent study in this school. A bibliography of paperbacks covering a survey of American history is listed.

In another participating high school, an Independent Learning Experience appeals to a select group of high school seniors who form core curriculums for their strong and particular intellectual interests. Students and staff design highly individualized programs around specific concerns. The high school, colleges, universities and scientific institutions in the New Haven area provide the resources through courses and consultation for these students. The bibliographies include a partial listing of books for four core topics as examples of the ILE approach.

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URBAN EDUCATION

Clark, Kenneth. Dark Ghetto

Prejudice and Your Child

Dennison, George. The Lives of Children

Eddy, Elizabeth. Walk the White Line: A Profile of Urban Education

Fuchs, Estelle. Teacher's Talk

Glasser, William. Schools Without Failure

Hentoff, Nat. Our Children Are Dying

Hurley, Rodger. Poverty and Mental Retardation

Jones, Reginald, ed.. Black Psychology

Keech, Fulton, Gardner. Education and Social Crisis: Perspectives of Teaching Disadvantaged Youth

Kohl, Herbert. 36 Children

Open Classroom

Lynch, Hollis. The Black Urban Condition

Orem, R. C. Montessori for the Disadvantaged

Passow, Harry, ed.. Urban Education in the 70's

Wilcox, Rodger C., ed.. The Psychological Consequences of Being Black

Wright, Nathan, Jr.. What Black Educators Are Saying?

URBAN SOCIOLOGY

Billingsley, Andrew. Black Families in White America

Brown, Claude. Manchild in the Promised Land

Clark, Kenneth. Dark Ghetto

Coles, Robert. Childrn of Crisis

Forman, Robert E. Black Ghettos, White Ghettos, and Slums

Frazier, E. Franklin. Black Bourgeoisie, The Negro Family in the United States

Freed, Leonard. Black in White America

Hunter, David. The Slums: Challenge and Response

Liebow, Elliot. Tally's Corner

Silberman, Charles E.. Crisis in Black and White

Thomas, Piri. Down These Mean Streets

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Wright, Nathan, Jr. Let's Work Together, Black Power and Urban Unrest

Washington Square Press Series on the urban condition (paperbacks on various topics)

Young, Whitney M., Jr. Beyond Racism: Building an Open Society

PSYCHOLOGY

(books written by Black professionals)

Clark, Kenneth. Dark Ghetto

Comer, James. Beyond Black and White

Fanon, Frantz. Black Skin, White Masks

Jones, Reginald, ed. Black Psychology

Pouissant, Alvin. Why Blacks Kill Blacks

Wilcox, Rodger C., ed. The Psychological Consequences of Being a Black American

JAZZ

Blassingame, John W. The Slave Community

Charters, Samuel B. Jazz New Orleans 1885-1963

Cone, James H. The Spirituals and The Blues

Courlander, Harold. The Negro Folk Music, U.S.A.

Dankworth, Avril. Jazz: An Introduction to Its Musical Basis

Dexter, David, Jr. The Jazz Story

Feather, Leonard. Jazz from Then to Now

Jazz Masters Series, 1920's, 1930's, 1940's, 1957-1969

Jones, Le Roi. Blues People

Black Music

Kings of the Jazz Series (separate paperbacks on outstanding jazz artists)

Shapiro, Nat and Hentoff, Nat. Hear Me Talkin' to Ya

Southern, Eileen. The Music of Black Americans

Readings in Black American Music

Williams, Martin. The Jazz Tradition

THE SLAVE COMMUNITY

Aptheker, Herbert. The American Negro Slave Revolt

Bennett, Lerone, J. Before the Mayflower

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Blassingame, John. The Slave Community
Buckmaster, Henrietta. Let My People Go
Elkin, Stanley. Slavery
Franklin, John Hope. From Slavery to Freedom
Frederickson, Frederick. The Black Image in the White Mind
Herskovits, Melville. The Myth of the Negro Past
Jordan, Winthrop. White over Black
Lester, Julius. To Be a Slave
Meier, August and Rudwick, Elliottt. From Plantation to Ghetto
Meltzer, Milton, ed. In Their Own Words
Quarles, Benjamin. Black Abolitionists, The Negro in the Making of America
Stampp, Kenneth. The Peculiar Institution
Styron, William. The Confessions of Nat Turner

AFRO-AMERICAN LITERATURE, DRAMA AND POETRY

Literature

Baldwin, James. Go Tell It on the Mountain, Notes of a Native Son, Nobody Knows My Names, The Fire Next Time, Another Country
Briggs, Sutton. Imperium in Imperio
Brown, Claude. Manchild in the Promised Land
Douglass, Frederick. Narrative of the Life of Frederick Douglass
Angelou, Maya. I Know Why the Cagebird Sings
Ellison, Ralph. The Invisible Man
Autobiography of Malcolm X
Goldman, Peter. The Death and Life of Malcolm X
Greenlee, Sam. The Spook Who Sat by the Door
Moody, Anne. Coming of Age in Mississippi
Parks, Gordon. The Learning Tree, A Choice of Weapons
Three Negro Classics
Booker T. Washington. Up from Slavery
William E. B. DuBois. The Souls of Black Folk
James Weldon Johnson. The Autobiography of an Ex-Colored Man

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Waters, Ethel. His Eye Is on the Sparrow
Williams, John. The Man Who Cried I Am, Captain Blackman
Wright, Richard. Native Son, Black Boy, Uncle Tom's Children, Eight Men, White Man, Listen!, The Outsider
Fabre, Michel. The Quest of Richard Wright
Gaines, Ernest. The Autobiography of Miss Jane Pittman
Hughes, Langston. The Best of Simple
Hines, Chester. If He Hollers, Let Him Go
Hughes, Langston. The Best Short Stories by Negro Writers: An Anthology from 1899 to the Present

Drama

Baldwin, James. Blues for Mister Charlie, The Amen Corner
Bullins, Ed. The Duplex, Five Plays: Goin' a Buffalo, In the Wine Time, A Son Come Home, The Electronic Nigger, Clara's Ole Man
Elder, Lonnie III. Ceremonies of Dark Old Men
Jones, LeRoi (Iammu Baruka). The Dutchman, The Slave, Four Revolutionary Plays
Hansberry, Lorraine. To Be Young, Gifted and Black, Raisin in the Sun, The Sign in Sidney Burnstein's Window
Joseph, Stephen, ed. The Me Nobody Knows
Hughes, Langston. Five Plays
Van Peebles, Melvin. Ain't Suppose to Die a Natural Death
Anthologies: Bullins, Ed, ed. New Plays from the Black Theatre
Patterson, Lindsay. Black Theater
Dent, Thomas. The Free Southern Theater

Poetry

Giovanni, Nikki. Gemini (an autobiography), Black Feeling, Black Talk, Black Judgement, My House
Hughes, Langston. Selected Poems of Langston Hughes, The Panther and the Lash, New Negro Poets, U.S.A.

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Hughes, Langston, ed. with Arna Bontemps.
The Poetry of the Negro, 1746-1949
Ask Your Mama (poems set in a pattern of jazz music)

Anthologies: Black Poets of the U.S.
Arna Bontemps. American Negro Poetry
Larry Neal. Black Fire
Abraham Chapman. Black Voices

Walker, Alice. Revolutionary Petunias
Wheatley, Phyllis. in collections of early poetry in the U.S.
Brooks, Gwendolyn. Selected Poems
Cullen, Countee. On These I Stand
McKay, Claude. Collected Poems

AMERICAN HISTORY

Colonial Period and the Revolution

Degler, Carl. Out of Our Past
Morgan, Edward. Birth of a Republic.
Hofstadter, Richard. The American Political Tradition
Jordon, Winthrop. White over Black

Pre-Civil War

Degler, Carl. Out of Our Past
Hofstadter, Richard. The American Political Tradition
Stampp, Kenneth. The Peculiar Institution
Blassingame, John. The Slave Community

Civil War

Donald, David, ed. Why the North Won the Civil War
Donald, David. Lincoln Reconsidered
Wolf, William. Lincoln's Religion
Hofstadter, Richard. The American Political Tradition

Reconstruction and the Gilded Age

Hofstadter, Richard. The American Political Tradition
Bartlett, Richard, ed. The Gilded Age: America, 1865-1900
Cochran, Thomas and Miller, William. The Age of Enterprise

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Woodard, C. Vann. The Strange Career of Jim Crow
Meier, August and Rudwick, Elliott M. From Plantation to Ghetto

Twentieth Centruy -- before 1930
Hofstadter, Richard. The American Political Tradition
Handlin, Oscar. The Uprooted
Mowry, George. The Era of Theodore Roosevelt
Blum, John. Woodrow Wilson
Tierney, Kagan and Williams. The Outbreak of the First World War
Leighton, Isabel, ed. The Aspirin Age

Twentieth Century -- post-1930
Hofstadter, Richard. The American Political Tradition
Leighton, Isabel, ed. The Aspirin Age
Galbraith, Kenneth. The Great Crash
Goldman, Eric. The Crucial Decade
Gladwin, Thomas. Poverty, U.S.A.
Harrington, Michael. The Other America
Kotz, Nick. Let Them Eat Promises
Douglas, William. Points of Rebellion
Fulbright, William. The Arrogance of Power
Meier, August and Rudwick, Elliott. From Plantation to Ghetto
Wright, Nathan, Jr., ed. What Black Politicians Are Saying
Silberman, Charles. Crisis in Black and White
Caldwell, William, ed. How To Save Urban America
Fitzgerald, Frances. Fire in the Lake

THE THEATER: ITS HISTORY, LITERATURE AND TECHNIQUES

Sophocles. Electra
Euripides. Electra
Anouilh. Antigone
Sophocles. Antigone
Aristophanes. Frogs
Aristophanes. Clouds
Ford. 'Tis a Pity She's a Whore
Racine. Phaedra
Racine. Andromaque
Sheridan. School for Scandal
Ibsen. The Master Builder
Ibsen. Enemy of the People

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Reed, J. Freedom
Sophocles. Oedipus Rex
Plautus. Menaechme
The Everyman, anonymous
Shakespeare. King Lear
Moliere. Tartuffe
Brecht. Baal
Brecht. Mother Courage
Pirandello. Henry IV
Ionesco. Bald Soprano
Beckett. Happy Days
Genet. The Balcony
Offson. You Can Act.
Barnfield. Creative Drama in Schools
Spolin. Drama Improvisation in the Theater
Hanau & Deutsch. The Provincetown
Glaspell. Road to the Temple
Doyce & Hapgood. Enemies
Jones,R.E. The Dramatic Imagination
Churchill. The Improper Bohemians
The Second Shepherd's Play, anonymous
Lope de Vega. The Sheepwell
Shaw. Mrs. Warren's Profession
Shaw. Heartbreak House
Pirandello. 6 Characters in Search of an Author
Beckett. Waiting for Godot
Pinter. The Homecoming
Handke. Kaspar
Israel. Miss Tallulah Bankhead
Barrymore. Confessions of an Actor
Blair. The Impossible Theater

ESKIMO LIFE, CULTURE AND ENVIRONMENT

Literature

London. White Fang
Scrimshaw, the Folk Art of the Whalers
Lorenz. Studies in Animal and Human Behavior
I Breathe a New Song, collection of Eskimo poetry
Reports from the Canadian North, two volumes
Morris. The Naked Ape
Morris. The Human Zoo
Lorenz. Agression
Biology, Ecology
Bold. The Plant Kingdom
Cooley. Alaska
Pride. Nenaga
Stone. Projects:Botany
Gordon. Man and the Sea
Law and Environment
Mowat. People of the Deer
My Life with the Eskimo
Melville. Moby Dick
Darwin. Voyage of the Beagle
Swartz. Life in a Drop of Water
Powers. Animals of the Arctic
Shuttleworth. Non-Flowering Plants
Meadows. The Limits to Growth
Cowan. Frontiers of the Sea
Sears. Where There Is Life

Hamden- New Haven Cooperative Education Center

Anthropology

Jolly. Study of Animal and Primate Behavior

Bidney. Theoretical Anthropology

Steffanson. My Life among the Eskimos

Erikson. Childhood and Society

Dubos. Man Adapting

Barber. Social Stratification

Lewis. Five Families

Turnbull. The Forest People

Dobzhansky. Man Evolving

Darwin. Origin of the Species

HISTORY OF SCIENCE AND ITS EFFECTS ON CONTEMPORANEOUS THOUGHT

Aeschylus. Agamemnon

Plato. The Republic (excerpts)

Milton. Paradise Lost

Newton. Principia (vol.1)

Dreyer. Tycho Brahe

Lodge. Pioneers of Science

Dreyer. A History of Astronomy from Thales to Kepler

Brewster. The Martyrs of Science

Gillespie. The Edge of Objectivity

Dijksterhuis. Mechanization of the World Picture

Brahe. Discussion and Description of His Instruments

Donne. Selected Poetry and Prose

McCarthy. The Stones of Florence

Kuhn. The Structure of Scientific Revolutions

Westfall. Mechanism and Mechanics

Westfall. The Construction of Modern Science

Neugebauer. Exact Sciences in Antiquity

Aaboe. Episodes from Early Mathematics

Hamden-New Haven Cooperative Education Center

GRAPHIC DESIGN

Caxton. *England's First Printer*, 2 vols.

Biggs. *Typography*

Behrman. *Duveen*

Walter Pater on Art

Luscher. *Color Test*

Jacobsen. *Developing Copying Methods*

Counterfeiting in America

Zapf. *About Alphabets*

Books and Printing, essays

Bridges. *Testament of Beauty*

Kohler. *Gestalt Psychology*

Wolf. *Kandy-Koloured Tangerine Flaked Streamlined Baby*

Psychology Today, selected chapers

Experiments in Visual Perception

James and Higgins. *Photographic Theory*

Sheppard. *Photographic Design Methods*

Milford Public Schools
Milford, Connecticut

MILFORD ENRICHMENT CLASS FOR GIFTED CHILDREN
GRADES 4,5, and 6

The Milford Enrichment Program includes forty children of grades 4,5, and 6, in a semi-separation arrangement, four days spent in a home school setting and one day assigned to the special class. The program provides time for activities and materials that go beyond the grade level experience for children who may pursue independent or group activities using larger blocks of time than would be available in a traditional class.

Communication skills are the core of the program with emphasis on communication through art, music, literature, written and oral expression. Structured learning experiences and teacher directed activities are designed to help the child not only to accumulate facts but to integrate, classify, and organize information. The children are encouraged to explore the inherent implications and abstract meaning, seeking to find many solutions rather than only one to the problem presented.

I. METHODS OF INSTRUCTION

A. The child develops personal responsibility for learning.
   1. Makes his own lesson plan for his day's activity.
   2. Contract system for projects growing out of the student's individual interests.
   3. System of cleanup - by chart check-off.
   4. Evaluation at the end of the day - a personal evaluation.
   5. Progress report - each child reports to the group about his project.

Milford, Connecticut

B. The use of questioning
   1. Teacher's questions to encourage brainstorming
   2. Use of questions to elicit divergent answers
   3. Student's questions that receive questions as answers - to encourage student's investigation

C. Special activities
   1. The Credo - a discussion of ideas growing out of a quotation from literature, religion, history, philosophy
   2. Games of logic
   3. Simulation games
   4. Use of values clarification techniques
   5. Field trips
      a. Visits to industry - base for information, discussion opening of horizons, discussion of values
      b. Exposure to variety of educative experiences - cultural, intellectual at museums, galleries, concerts, theater, universities

D. Problem solving - analysis

E. Use of adult and student mentors - high school teachers, high school students, citizen volunteers, parents, and former members of the program

II. MATERIALS FOR INSTRUCTION

A. Audio-visual materials
   1. Use of multi-media center by students as they need its facilities
   2. Individual order of films and film strips by the students for their individual use
   3. Recording equipment
   4. A.V. equipment such as projectors, film, loops, slides, tapes, and cassettes
   5. Use of make-your-own film strips and cassettes

B. Learning Centers
   1. Cooking and shopping and food planning
   2. Movie filming project
   3. Photography laboratory and use of the camera as well as developing and printing and enlarging
   4. Sewing center, equipped with hand looms and sewing machine
   5. Chemistry laboratory
   6. Biology laboratory - microscopes, bloodtyping, physiology slides
   7. Zoology - animals for care and observation, specimen exhibits. The Zoo has snake, tropical fish, guinea pigs, hamster, gerbils and frogs.
   8. Ecology center

Milford, Connecticut

9. Braille
10. Piano lessons
11. Typing corner - use of self-instruction manuals
12. French lessons - ALM records, labeling of objects within the room, teacher instruction.
13. Theater - improvisation, drama, puppetry, broadcasts
14. Electronic kits
15. Art and music appreciation
16. Craft center

Nita Cohen, Teacher

Naugatuck Public Schools
Naugatuck, Connecticut

NAUGATUCK ACADEMICALLY TALENTED CLASS

The Naugatuck special class serves third, fourth, and fifth graders meeting for a full day once a week. Within an open classroom, inquiry-discovery methods are employed which emphasize individualized instruction. The teacher serves as a facilitator of learning and a wide variety of areas is studied depending upon the needs and the personal choice of the student. The vehicle used is independent study and/or a daily lesson plan.

General objectives of the curriculum are to develop and encourage:

- self direction
- self motivation
- decision making
- creative thinking
- the higher thought processes
- the process of valuing
- self awareness

Samples of independent studies are:

- gerbil mazes
- lazer beams
- foreign languages
- frog dissection
- oil painting
- book binding
- play writing
- wood working
- weaving
- President Lincoln

Samples of activities involving large and small groups are:

- archaeological dig
- simulated courtroom debates
- movie making
- sensory awareness activities
- cooking
- learning games
- speakers
- field trips
- creativity activities

Eileen Cooper, Teacher

New Haven, Connecticut

EDUCATIONAL CENTER FOR THE ARTS

The Educational Center for the Arts is a new regional public school program for high school students who have outstanding talent in the arts. Daily 120 students attend the Center from city and suburban high schools in the New Haven area and work together with a staff of producing and performing artists/teachers in a stimulating total arts environment.

Semi-separation Concept

After several years of extensive planning with representatives from each school district in the New Haven area, the Greater New Haven Arts Council, and consultants from the State Department of Education, it was decided to organize the instructional program as a semi-separation experience for gifted and talented high school students in the arts.

Under this concept, a student schedules approximately one half of his high school learning program at the Center in special arts instruction and the other half in courses at the local high school. The student receives full credit from the local high school for learning at both places. To implement this concept, school districts usually need to make some modifications in the regular high school course requirements for students who qualify to attend the Center. In addition, a student frequently must make new kinds of choices and decisions in order to schedule the courses that are most wanted and needed at the local high school along with the Center's program.

Eight Program Areas

The Center has eight major program areas. These include instructional experiences for students with undeveloped talent in dance, music, theatre, and the visual arts. Different instructional experiences are provided students with highly developed talent in the same fields. The visual arts area is defined to include painting, drawing, sculpture, design, as well as photography, video, and 8mm film.

New Haven, Connecticut

Rationale for Program Development

The individual student is the center of the instructional program. This means that the continued formulation of instructional experiences in each of the eight program areas must be shaped in response to the special needs of each student.

[illegible] experiences should supplement, enhance, and expand rather than duplicate or conflict with the student's regular activities and arts instruction either in school or the community, i.e. private music instruction, art and dance classes, theatre productions, and large performing groups in music.

Because of the important differences unique to each art field or program area, and each student, the Individual Learning Program approach for the organization of instruction is the key strategy which guides the continued work in program development and evaluation. Some of the instructional experiences that have been developed to meet the variety of needs in the different program areas are:

Theatre: experience to develop an actor's relational qualities and skills through improvisation, ensemble work, story theatre and theatre games; activities and techniques to develop the body, sense awareness, characterization, emotional memory; group performance experiences; activities to develop skills in mime, technical theatre, scene analysis, vocal development; experiences in playwriting and reading contemporary and classical theatre literature.

Visual arts: experiences to develop drawing technique and facility to create volume, shape, quality of line in objects and the human figure; activities to develop visual perception; experiences in basic visual qualities - unity of expression, texture, rhythm, appropriate finish and use of materials; experiences to develop new ideas from natural forms for sculpture; collaborative designs for constructing total environments and rearranging the natural environment; special sessions in video, Super 8 film, and still photography.

Dance: technique instruction for body development in ballet and modern; performance skills through improvisation; activities to develop the body to express ideas in creative ways; individual and group performance experiences, activities in movement analysis and notation; special sessions in other dance styles that include African, European Folk, and Hindu.

New Haven, Connecticut

Music: ensemble experiences which involve representations of classical, contemporary, jazz, rock, and original student compositions; improvisation experiences with mixed instruments; performance classes which present common performance problems, e.g., stage presence, preparation; performance classes which present common performance practices in historical periods; experiences for music skills development in writing, listening, analysis and composition.

Students say that the creative atmosphere stimulated by action and interaction of dance, music, theatre and art in a total arts environment is by far the most significant difference between learning at the Center and learning at the local high school. Although students are expected to do concentrated work in their major field, it is also the philosophy of the program to encourage students to develop meaningful relationships with the other arts and in turn discover new resources which may enhance their own area of specialization.

A flexible schedule, which is coordinated among the eight program areas, gives students regular time to include instructional experiences in another field. For instance, an acting student in theatre can participate in movement experiences in dance; a dance student can work with rhythm in music; a vocal music student can work on voice interpretation in theatre.

There are also inter-arts group experiences. These sessions involve students working with ideas that are common as well as with ideas that are unique among the different arts. For example, groups have worked on creating a visual structure and transforming it into sound or movement and explored concepts like negative space, color, form or design of a composition and rhythm.

The quality of the instructional experiences depends, for the most part, on the selection and development of highly qualified staff resources. Consequently, the Center is developing a differentiated staffing model which includes a range of high level performing and practicing artist-teachers as well as different kinds of supportive staff services. The continued development of the staffing model will depend primarily on the changing needs of students, and the increasing of available funds.

The present staffing model includes three full time staff with responsibilities for program supervision and development, teaching and administration. (Appendix H, Functions of Supervising Staff) Also there are ten part-time artist-teachers who are responsible for assessment of student needs, organization of instructional experiences and evaluation of learning. They include a modern dancer, ballet dancer, theatre director-actor, playwright, painter, sculptor, designer-photographer, composer-improviser, and performing solo and ensemble musicians.

New Haven, Connecticut

Other artists are engaged to work with students in special sessions throughout the year. These include a music critic, environmental designer, African dancer, architect, film maker, theatre light designer and Hindu dancer, and mime performer.

An equally important part of the staffing model is the employment of supportive staff services. These persons assist the artist-teachers with the preparation of materials, teaching and supervising the proper use of power tools and equipment in the sound studio, light control room, darkroom, and media studio.

Most of the staff are professionally active as performing or producing artists in the New Haven area. Because they have demanding commitments to their own work, it is natural for them to include dimensions of their professional work in the instructional experiences. For many students, it is a new experience to work closely with a person who is an active musician, playwright, or painter, rather than a person who is completely involved in the process of teaching music, theatre, or art.

DeWitt Zuse

North Branford Public Schools
Northford, Connecticut

The instructional practice utilized in North Branford is one of enrichment. For the students enrolled in the program it is a time of exploration for them to become aware of their interests and abilities and further develop them.

The majority of class time is devoted to independent research within a certain unit of study.

Many of the projects carried out by the students in 1973-74 are in the areas of science, mathematics and the creative arts. Group activities include plays, debates, radio programs, games and visual material created by various members of the program.

Many materials are utilized, with the following used most frequently: Nuffield Math Series, Simulation Games - Urban Systems, Aware - a multisensory program about poetry (Random House), Roget's Thesaurus, Ecology Kits - Urban Systems, biological supplies including specimens for dissection, audio-visual aids.

Other activities which are a part of the program do not require any specific materials, such as role-playing, learning proper research techniques, experimenting in different science fields and learning how to survey and interview.

Field trips and resource people are an important aspect of the program.

Eleanor Sheldon

Thompson Memorial School
North Grosvenordale, Connecticut

The North Grosvenordale program is part-time. This year they are working with two groups of elementary school children, ½ day each, in the town library. The children are driven there, then back to school, by parent car-pools. The district spreads over a large area that is rural in character and limited in cultural resources. The school is concerned with the self-concept of these children as a personal and social resource. Values, through discovery and teaching, has emerged as the prime focus.

Activities fall into the following categories: --Independent and group exercises which encourage fluency, flexibility, elaboration and originality, --Creative dramatics and boundary breaking games, --Creative writing, --Art activities, --Visits by resource people from the community with a variety of ages, occupations, interests and experience, --Involvement with community resources and activities, --Field trips to museums, science and environmental centers, radio stations, local industry, etc. for information as well as serving as points of departure for independent activities, --Open and in-depth discussion of relevant issues and ideas.

The North Grosvenordale program has a humanistic approach which, it is felt, meets a vital need for these youngsters. They are concerned with perception and

North Grosvenordale, Connecticut

growing awareness. Communication of feelings is germa ne to the program and the final progress report is based on Bloom's Taxonomy of the Affective Domain.

Frances Kornbluth

Teacher-Director

Norwalk Public Schools
Norwalk, Connecticut

CREATIVE CHILD PROGRAM

Program Objectives for the Artistically Talented

General Objective

To reinforce the creativity of talented child artists.

Specific Objectives

The development and reinforcement of the characteristics of originality and fluency in visualizing and producing visual symbols.

The development of an experimental attitude toward using art techniques in various media.

The reinforcement of interest in various forms of art as reflected in electing art subjects in the secondary schools.

Curriculum Content

Materials and ideas presented to the creative child vary greatly from the regular curriculum. Art materials used in the fourth, fifth and sixth grade creative classes include oil paints, acrylic paints, sculpture in wood, serigraphy, woodcuts, designing decorative machines (that move), and school projects in mosaics, wood and metal as part of the permanent decor of the building interior and exterior.

Special Techniques

Pupils attend one weekly class of 90 minutes duration, in addition to their regular art class. An itinerant teacher travels to ten schools and conducts these classes. Pupils are grouped in one class from all three grade levels. Each unit based upon a single art medium is approached with a creative problem-solving motivation, permitting greater range of individual response. Originality and independence of thought is not only stressed, it is required. A pupil is required to submit many ideas, not a single idea, for his individual project.

The depth of pupil thinking is the focal point for teacher action; the teacher probes into possibilities of combining ideas, materials, modifying ideas, magnifying them, etc. until the individual pupil learns to reinforce and think in depth about his idea before presenting it to the teacher.

Norwalk, Connecticut

Articulation With Other Levels

Presently the first group of pupils from the creative classes entered junior high school, causing several curriculum changes in time schedules, types of classes and media used at this level.

Programs at secondary school levels will be organized to follow-up the education of most successful elementary school pupils from the program. Secondary school teachers will observe the elementary programs in action and meet with the teachers of the creative pupils to discuss the direction of the second phase of the program.

Check lists and anecdotal records of the pupils will be forwarded to art teachers and guidance personnel in middle and high schools as records of past efforts and abilities.

Supportive Services

The only services necessary to support the current program are in the areas of staff training and curriculum. Specialists in creativity at the University of Bridgeport can be utilized to develop a training program resulting in the creation of video-tapes, viual creativity tests and curriculum goals and objectives.

Unit Problems in Artistically Talented Program

The curriculum consists of several visual problems and much experience in drawing for selected grade 2 to grade 5 students.

Drawing

The first 10 minutes of each activity session is devoted to drawing new objects and designs, both as a warm up activity and as a learning experience. Such principles as foreshortening, perspective, light and shade and composition are part of this unit. Pupils learn to draw with brushes, pen and ink, pencil, magic markers and charcoal.

Painting

Design Problem #1

Pupils are confronted with the visual problem of readjusting realistic objects into abstract symbols.

Norwalk, Connecticut

Landsacpe Problem

Pupils are motivated to sketch ideas, improve these visually, and extend the ideas into one acrylic painting on canvas.

Design a Machine

Pupils are presented with the problem of designing a completely new machine, i.e., one machine that can go into an apple orchard and bake an apple pie on the spot. This calls for many kinds of thinking as well as originality and inventiveness.

Draw a Bike Problem

Pupils are required to draw a bicycle in a complex view (from facing front), forcing foreshortening.

Pallette Knife Problem

Pupils are presented with the problem of using three colors to create all other colors in a design.

Individual Problems

All other painting problems are individually oriented between teachers and students.

Dr. Donald Rogers

Norwalk, Connecticut

DIFFERENTIATED PROGRAMS FOR GIFTED CHILDREN

The basic curriculum for gifted pupils in Norwalk combines an interdisciplinary and highly individualized approach to projects in the areas of reading, creative writing, science, mathematics and social studies that alternates with small group problem-solving activities aimed at reinforcing and recognition of thinking skills. All materials and activities utilized in the gifted program are articulated by special subject supervisors in Norwalk to ensure that learning is truly differentiated and not repetitive or similar to other activities in each area. Teachers and gifted pupils determine their own direction of the selected projects.

General Learning Objectives

1. To provide a program that will stimulate the interest and abilities of intellectually gifted and intellectually creative students.

2. To develop the principles of divergent thinking by encouraging originality and fluency in solving problems.

3. To encourage an analytical and discriminating approach to critical thinking.

4. To establish an awareness of the role of the gifted individual within society.

Major Areas and Concepts of the Curriculum

Following a period of introductory material and discussion in one or more of the four subject disciplines, pupils and teachers in the new program gradually move toward transition to an individualized approach to individual problems requiring various types of thinking processes, i.e., convergent, divergent, analytical, synthesis, critical, and abstract thinking. Pupils learn to recognize various thinking techniques, classify them and apply their thinking to real problem areas.

Social Studies

The basic concepts that gifted children begin with in the area of social sciences are classified under cultural anthropology. After initial discussions based upon primitive cultures, pupils and teachers identify indiviual projects to research based upon: the concept of man's goals and ways of life that lead to problems and failures, pupil's awareness and identification of the various ways they think and inquire about cultural information, and pupil awareness of immediate human problems that individual pupils can help solve.

Norwalk, Connecticut

Mathematics

The basic concept that gifted children begin with in mathematics is in the area of statistical analysis and probability. Following basic learnings of mathematical concepts, pupils identify a project of interest to them related to their learnings in mathematics that will reinforce: learning to apply the laws of probability to a problem, techniques of classifying statistical information that can be used in a project of individual interest, how statistics play a role in American life, and learning how false information is produced and disseminated.

Science

The basic concepts that gifted children begin with are in the area of earth science. After exposure to concepts and discussions based upon identifying problem areas, each pupil identifies individual experiments of interest that will help him to: reinforce creative and original problem-solving in carrying out earth science experiments, learn to formulate investigations independent of teacher guidance that will solve an identified hypothesis, develop an ability to brainstorm problems and ideas related to earth science, lead to the selection of a localized science problem requiring original and divergent thinking, reinforce learning to utilize various forms of thinking.

Language Arts

The basic concepts that gifted children begin with in language arts are in the area of creative writing stressing originality in writing themes, children's books, poems, and essays, developing an awareness and sensitivity to subjects, the interrelationships between creative writing, art and music, learning to identify and use the creative factors of originality, elaboration, fluency and flexibility through discussion, analysis, and action.

Dr. Donald Rogers

Regional School District #16
Prospect, Connecticut

The pupils identified as gifted in Prospect are separated from the regular classroom 2½ hours each week for differentiated instruction intended to develop their individual needs and interests. The teacher of the gifted program assumes the responsibility for the differentiated instruction of the gifted pupils.

The additional curriculum differentiation activities of the TAG Program occur within the semi-separated class. The major goals of this class are:

(a) to further develop information location skills, critical and interpretive reading skills, and reporting techniques.

(b) to further develop attitudes and abilities of inquiry, self-expression, interpersonal relationships, and social responsibility.

(c) to provide an opportunity for pupils to develop a responsibility for the selection, scope, and pursuance of their individual activities by devising their own long range plan of study (teacher and consultant assistance is available to aid pupil planning).

(d) to intensify the study of an interest area and to broaden the spectrum of pupil interests.

(e) to promote an awareness of the social and moral implications of content area subjects and current topics of interest.

(f) to develop a sense of personal pride and accomplishment in the products that culminate independent study.

The TAG Program of Prospect operates in three distinct phases. The first consists of "mini-courses". Some of the "mini-courses" the children may have elected to participate in were:

Prospect, Connecticut

Art Appreciation	Business Enterprise
Spanish	Independent Spelling
Jury Procedure	Library Research
Ecology	Dewey Decimal System
Eras 1900-1973	Individualized Reading
Rocketry	Categorizing
Energy Crisis	Conservation
Environmental Pollution	World Understanding
Government - Watergate	Cooking

The second phase of the TAG Program is directed toward the independent study of pupil's interests. The program is highly structured for "new" TAG participants but is designed to enable them to eventually assume responsibilities for self-direction, selection, and planning of their time. The following list illustrates the breadth of pupil interests. These items represent some of the independent study ventures of 4-6 grade youngsters in the TAG program.

Arizona	Library Assistants	Paper Sculpture
Ants	Bridge Architecture	Oil Painting
The Desert	Birds of Connecticut	Clay Sculpture
Puppets	Observation Stimulator	Vivid Inventors
Watergate	Creativity - Object	Keeper of Dates
Reptiles	Creativity - Words	Symbol Historian
The Sea	Materials Dective	Constellations
Mythology	Science Specialists	Game Creators
Penguins	Legends of Christmas	Let's Find Out
Set Design	Creative Writing	Rocket Design
Deer	Program Director	T V Commercials
Poetry	Neighborhood Surveyor	Paint A Poem
Ecology	Important People	Q-Tip Projects
Computers	Future City Design	Marc Chagall-Art
Rocketry	Field Trips Theater-Radio	Food Ambassador

The third phase of the TAG Program is directed toward the development of productive group-interaction processes. Seminars are conducted in which pupils work in groups of 6-8 pupils on simulation, brainstorming, and other activities related to their personal needs or interests. Most topics are

Prospect, Connecticut

teacher-selected but pupils often have the opportunity to alter the seminar calendar. Their concerns are given primary consideration. Discussion topics and activities such as the following are experienced during the seminars.

Energy Crisis - Solutions to (Brainstorming)
Emotions - Fear and Anger (Personal experiences - discussions)
Mythology (Discussion)
Cooperation vs Competition Business Enterprise (Simulation)
Marc Chagall - Russian Artist (Discussion)
How to Make Friends (Brainstorming)
Disruptive Behavior (Discussion)
Study Techniques - Dewey Decimal System (Research)
Courtroom Procedures (Discussion)
"What If You..." (Personal Experiences - Discussion - Brainstorming)
Presentation of Projects (Culminating Activity - Theater)

Michael A. Dance
Teacher

Simsbury Public Schools
Simsbury, Connecticut

Design

Simsbury's program for intellectually gifted elementary school students is completing its fifth year of operation (third with State reimbursement). One hundred ninety-six fourth, fifth and sixth grade students are being serviced in all of the town's six elementary schools.

Plans for 1973-74 include the addition of a fourth full-time teacher of the gifted to accommodate our expansion to grades seven and eight.

Essentially, elementary school youngsters are taken from regular classes for approximately one hour per day on four days each week. The majority of the school activities deal with acquiring the principles of divergent thinking (create-devise-design-suggest hypotheses-think of as many as you can-what would it be like if-how many ways are possible-compose-develop-in what ways can you improve-suppose-form a new-think of something no one else has thought of before). The encouragement of originality, creativity, and flexibliity, fluency and curiosity in solving problems of various kinds is a primary objective.

Junior high school students will receive the special services for forty minute periods on three days each week in place of study halls.

Simsbury, Connecticut

Teachers at the elementary school level service each school for a half year period. Follow up acitvities with the gifted students take place during the "unscheduled" half year on an occasional basis.

Objectives

To provide a program to stimulate the talents (obvious and latent) of IG students.

To emphasize process of thinking rather than content of subject.

To develop the principles of divergent thinking.

To encourage IG students to be self-actualized by having a healthy self concept, a broad tolerance, and an integrated value system.

To provide an atmosphere within which the IG students can best perform together and stimulate each other: under guidance, in small groups, without pressure, with appropriate materials.

To encourage an analytical and discriminating approach to exercises in convergent thinking.

Examples of Materials/Ideas

ASTRA: "Conflict and the Law", "Logic", "Sentence Reasoning", "Mythic Bases of Literature", "An Adventure in Geometry", "Modular Arithmetic"
"Attribute Games and Problems"
"Batteries and Bulbs"
Brandwein, Ruculis, "100 Invitations to Investigate"
"Clay Boats"
"Creative Problem Solving" -- Chicago Public School In-Service Training Program
Holt, Rinehart, and Winston, "I've Got A Name"
Imagicraft, "Messages for the Millions" -- the Stories of Alexander G. Bell and Samuel Morse on records
Junior Great Books Series
Lanza, "Newspaper Notions for Creativity"
"Life on Paradise Island" -- Economic Life on an Imaginary Island
Meyers, Torrance, "Plots, Puzzles, and Ploys"

Simsbury, Connecticut

"Mystery Powders"
"Peas and Particles"
Purdue University, "Creativity Training Program"
Renzulli, "Mark I Program for Creativity"
Rogers, "Creative Art" from Learning Systems Co.
Routeledge, "Math Set -- Geometry"
Science Kits: Electro-Photo, Chemistry, Miscellaneous
Silver Burdett Student Lab Program: "Measurements", "Wave Motion", "Mechanics"
Talcott Mountain Science Center Field Trips
"Tangrams"
"Teaching Literature to the Gifted" -- New York Office of Elementary School Publication
"The Young Thinker"
Torrance, "Exercises in Creativity"
Williams and Eberle, "Content, Process, Practice - Creative Production in the Classroom"

Examples of Field Trips and Community Resources

Political Rallies and Campaigns
Hartford Stage Company
UCONN Medical-Dental School
American Shakespeare Theater
Farmington Valley Arts and Crafts Center
Newgate Prison
Worcester Science Center
The Hartford Courant
Conn. River Historic Excursion

Special Units Prepared

Archeological Digs
Cheese Making
Codes and Cryptograms
Computer Study
Movie-Making
New Products
Newspaper
Stock Market Investing
Who's Who in the Zoo
Creative Movement
Career Role Playing
Invent and Construct a Game, a Tool
Think-ups: Discussion cards requiring divergent answers
The Northeast Indian
People Around the World
Problems Facing Man Today
Producer-Consumer
Research Projects
Self Identification
Systems Analysis
Exploratorium
Improvisational Drama
Shadow Theater
Photography, Slides, and Filmstrips
Community Problems and Conflicts
Play Writing and Dramatizations

Leonard Lanza, Director

Southington Public Schools
Southington, Connecticut

The program is structured in a manner which will allow the identified students to basically pursue an individualized program of in-depth study and research in areas of keen interest. Specifically, the major parts of this structure include:

Two teachers carefully recruited for their strengths and experiences in the academic fields of History, English, Science and Mathematics will guide the academically talented students. In addition, each teacher will possess a diversified background in Art, Music and/or a language. Each teacher will share his teaching time between the two Junior High Schools in such a manner that students will have the availability of this "special tutor" during the entire week. Teachers will work at each school for two and one-half days per week.

Students will carry a normal full schedule consisting of Mathematics, Science, Foreign Language, Art, Music, English-Humanities, History, Physical Education and Industrial Arts.

The students will have the opportunity to become involved in individualized instruction, small group instruction, researching questions and independent study. Every student will meet at least one hour per week with his "tutor" in either small group or individualized work sessions. These sessions will have the primary purpose of helping students plan, develop, refine and complete research or

Southington, Connecticut

interest projects. These projects will supplement the regular classroom program. Students will work, as necessary, in individual one-on-one teaching-learning situations, in small groups, across academic disciplines and across grade structures in their quest to complete their research projects.

The term, research project, is defined here as a student's in-depth study of a particular topic, or area of interest. This project should result in a specific product, created, written, filmed, taped, drawn, sung or danced which will clearly show the student's ability to assimilate a body of knowledge into a final product.

Therefore, there is no set curriculum and there is no set material or equipment designated for the program. The curriculum, materials and equipment may vary significantly from year to year. During the past year we have had the following projects from our students:

Sculpture	Macrame	Batiking
Candles	Embroidery and Needlepoint	History
Decoupage	Knitting and Crocheting	Painting,
Music	Psychology	Designs,
Sociology	English	Artifacts

Alfred T. Lederman, Ed.D.
Director of Secondary Education

Stamford Public Schools
Stamford, Connecticut

In the fall of 1972 Stamford initiated a program called Project Explore for gifted fifth and sixth grade students. Two clusters were established at that time, and in 1973 an added third cluster implemented the program city-wide at those grade levels.

Children who are intellectually gifted, creatively gifted, or who are culturally different with potential are candidates for selection. They attend Project Explore for two full days each week, and remain in their regular classrooms the other three days.

Nuffield Mathematical Project materials (John Wiley & Sons, Inc., New York) provide the basis for mathematical exploration, with a wide variety of mathematical tools, equipment, tasks and activities available to the child with special interest in this area.

The science curriculum is built around three units of the Rand McNally Science Curriculum Improvement Study (SCIS); Ecosystems, Energy Sources, and Models: Electric and Magnetic Interaction. These units are rotated among the three clusters and are not used in any other science program in the Stamford schools. Provisions are also made for the child with exceptional interest or ability in science to do independent experimentation and research.

Stamford, Connecticut

Great emphasis is placed on providing experiences and activities which encourage divergent productive thinking, open mindedness, value clarification, and a greater role in decision making, and at least a part of each day is devoted to such activities. Some examples of the materials used for these purposes are: Renzulli, Joseph S., New Directions in Creativity. New York: Harper and Row, Publishers, Inc., 1973. Parnes, Sidney J., Creative Behavior Guidebook. New York: Charles Scribner's Sons, 1967. Davis, Gary, Imagination Express: Saturday Subway Ride. Buffalo, New York: Dok Publishing Co. Inc., 1973.

The goal to widen occupational horizons is largely met by actually involving the class in a business venture, or simulating such an experience. In addition, outside speakers are invited to share their job experiences with the children.

Special projects selected by the class may lead to work in content areas such as social studies, literature, music and the social sciences, but there is no prescribed curriculum in these areas.

Children in the program are encouraged to be responsible for planning their own activities and learning experiences, so blocks of time are set aside during which they may choose from among the many activities and materials available to them.

The abilities vary greatly within the groups because of

Stamford, Connecticut

the three types of children who make up the population. It is necessary, therefore, to provide both a differentiated as well as an enrichment program to meet their many needs.

June Fiorelli and
Josephine Schlechtweg, Teachers

Talcott Mountain Science Center
For Student Involvement, Inc.
Avon, Connecticut

Talcott Mountain programs are almost entirely independent study programs, for students from intermediate grades through senior high school, wherein students choose, plan and carry out projects of their own choosing. Staff acts as a catalyst of materials, ideas, and procedures. The result is that the "curriculum" does not exist in the traditional sense. It constantly changes as student and staff outlooks and enthusiasms change.

The science offerings are in the subject disciplines of astronomy, meteorology, geology, seismology, ecology, chronobiology, radio-electronics, photography, and computer sciences. Recently gifted students have written computer programs modeling continental drift and predicting satellite positions, have collected and identified air pollutants, have photographed Comet Kohoutek and asteroids, have measured and isolated their own body rhythms, and have used infra-red aerial photography to determine vegetation forms. These projects probably give the best idea of the curriculum, such as it is.

The program is available upon application to gifted students from any community in Connecticut based upon superior scores on standard I.Q. tests and school recommendations and payment of tuition that is reimbursable to the community.

Programs are in operation for gifted pupils on Saturdays except during the summer.

E.W. Danielson

Vernon Public Schools
Rockville, Connecticut

PROGRAM FOR RESEARCH AND INDEPENDENT STUDY

The Vernon program is a program of research and independent study for the academically talented pupil. It is a total, coordinated program based on a team approach between the resource teachers and the classroom teachers. The youngsters are not expected to make up five hours of basic classroom work because they have been in the resource center.

Schedules are flexible. Considering field trips and other activities, these youngsters will average four days in the basic classroom and one day in the resource setting over the course of the year. The resource room setting is based on creative and innovative practices, making use of an interdisciplinary approach to subject matter and materials. Each student is on a highly individualized program and the increased motivation and interest of students will be utilized back in the basic classroom.

To carry out the above intellectual endeavors, each child in the program has the opportunity to become involved in such areas as the following:

A. Experimentation related to mathematics and sciences;
B. Comprehensive investigation of a problem of society;
C. Research within the humanities or sciences;
D. Creative expression of the results of such experimentation, investigation or research;
E. Creative expression in prose, poetry or drama.

Vernon, Connecticut

An appropriate balance of group discussion, group activity and independent study is provided. Areas of investigation and procedures to be used are determined cooperatively by the children and teacher. Choice of content areas are determined by interests, special talents and/or experiences. The role of the teacher is primarily that of a consultant and a resource person who promotes inquiry and independent study.

For grades 3-5, a center for the talented child was established in one of the elementary school buildings. Each child in the program goes to the center for two 2 1/2 hour periods each week. There are five groups of children.

For grades 6-8, a center for the talented child was established at the middle school. The amount of time for the student to be in the center is determined on an individual basis.

Each pupil enrolled in the Research and Independent Study Program is expected to fulfill the following:

1. Submit a plan for a research project no later than the second week after entering the program.
2. Schedule regular conferences for periodic evaluation.
3. Submit progress reports at the end of each week.
4. Be ready to discuss findings.
5. Accept responsibility for self-direction during independent study periods.

West Hartford Public Schools
West Hartford, Connecticut

The West Hartford Gifted Program provides career education from writing to marketing for secondary students gifted in the fine and performing arts through the operation of The TV Company, television arts productions by and for students.

The program is designed to give the students opportunities to explore and become proficient in career areas relevant to their individual needs and talents. Emphasis is also on helping the student improve his or her self-concept, thereby gaining in poise and self-confidence.

West Hartford provides special curriculum programs, activities and materials as the foundation of its program in TV art production with specialized consultant help in the areas of program development such as lighting, scripting, and set design. A cameraman/technician is on the staff as is a career education teacher/specialist for gifted and talented in the arts. The program is handled through master classes with visiting artists, field trips, and exposure to professional performances in the arts. While The TV Company meets as a production unit, small group experiences are also provided in each talent area.

The TV Company's programs are aired via West Hartford's Dial Select system which enables students at remote locations to see the programs.

West Hartford, Connecticut

One of the aims of The TV Company is to distribute programs written, produced, choreographed, scored, and acted by students to interested parties throughout the state. The students also periodically offer video festivals for students, faculty, parents and all interested parties.

III. BIBLIOGRAPHY ON CURRICULUM DEVELOPMENT:

A. ANNOTATED LISTING OF SELECTED CURRICULUM MATERIALS AND ARTICLES ON CURRICULUM DEVELOPMENT

B. ABSTRACTS OF SELECTED MATERIALS: ERIC

C. ABSTRACTS OF SELECTED MATERIALS: ACES COMPUTER SEARCH

BACHTOLD, LOUISE M., (Educational Research Project Consultant), Counseling Instructional Programs for Intellectually Gifted Students. Sacramento, California: California State Department of Education, 1966. Content includes rationale, characteristics, procedures and guidance for the Counseling Instructional Program which is applicable to both elementary and secondary levels.

BANKS, GEORGE W., (Editor), Proceedings of Eighth Annual Conference, California Association for the Gifted. "Theme: Time Out for Talent". San Diego, California: Southern California Association for the Gifted, San Diego Unified School District and County Schools, 1970. The conference report includes effective teaching strategies and enrichment suggestions focusing on all levels (primary through senior high).

BRANDWEIN, PAUL F., Teaching Gifted Children Science in Grades One Through Six. Sacramento, California: Bureau of Publications, California State Deparment of Education, 1973. A curriculum model for primary and intermediate grades which describes a science curriculum in detail.

BROOME, ELIZABETH, (ed.) and Governor's School Teacher Training Institute, Educating for the Future: 21st Century Teaching. Raleigh, North Carolina: Division for Exceptional Children, Department of Public Instruction, 1973. Contains theoretical background for developing curriculum for gifted children. Also has a large section with detailed lessons and ideas.

CALIFORNIA STATE DEPARTMENT OF EDUCATION, Educational Programs for Gifted Pupils. "A Report to the California Legislature Prepared Pursuant to Section 2 of Chapter 2385, Statutes of 1957". Sacramento, California: California State Department of Education, 1961, pp. 27-32.
A brief description of the programs involved in the report, includes enrichment, acceleration, special groupings and part-time interest groups for both elementary and secondary levels.

CALIFORNIA STATE DEPARTMENT OF EDUCATION, Principles, Objectives, and Curricula for Programs in the Education of Mentally Gifted Minors: Kindergarten through Grade Twelve. Sacramento, California: Bureau of Publications of the California State Department of Publications, 1971. Chapter III, pages 34-80, indicates the broad bases and overall philosophy regarding curriculum and instruction for gifted minors in California public schools for grades K-12 in the following subject areas: mathematics, science, English usage, literature, social sciences, foreign languages, art and music.

CALIFORNIA STATE DEPARTMENT OF EDUCATION, Program Administration: Administration 2 - Report of a Pilot Summer Session Workshop-Demonstration. Sacramento, California: California Project Talent, 1964. This report outlines the demonstration centers which offered differentiated programs for gifted children. The major purpose of the program was as an in-service training center to provide knowledge concerning curricular provisions suited to the gifted. Grade 3 - emphasizing individual placement, pp. 7c-7i. Grade 6 - emphasizing enrichment, pp. 8b-8o. Grade 7 - emphasizing counseling-instruction, pp. 9b-9j.

CENTER FOR INSTRUCTIONAL RESEARCH AND CURRICULUM EVALUATION, University of Illinois, The Gifted Classroom. Urbana, Illinois: 1971. Test encompasses the standards and themes of five case studies which focus on creativity, learning and independent study on the primary and middle levels.

Curriculum Material Developed for Ceiling Unlimited - A Program for the Highly Gifted Student at the Junior High School Level. Brockton Public Schools, Brockton, Massachusetts, 1970. An extensive collection of detailed units of study for gifted students in grades 7 through 9. Contains over one dozen interdisciplinary, humanities-based units in such areas as communication, religion and architecture, psychology, cinematography, and mythology. Also contains sections on social science, foreign languages, independent study, mathematics and science.

DEMING, BONNIE J. AND KLEIN, JACK L. Literature: Curriculum Guide for Teaching Gifted Children Literature in Grades One Through Three. Sacramento, California: California State Department of Education, 1970. Guide designed for developing concepts in literature; includes specific teaching activities.

Education of the Gifted and Talented, Report to the Congress of the United States by the U.S. Commissioner of Education, 1972. National School Public Relations Association, 1201 Sixteenth Street, N.W., Washington, D.C., 20036. This publication is an up-to-date national view of programs for the gifted. For persons responsible for developing programs for the gifted and talented, it provides a sharp focus on the needs and problems as well as good ideas and practical information to meet these challenges. Some of the topics are: Can we identify the gifted from minorities and diverging cultures? Can we identify the creative and talented? What is a good program for the gifted? Because the material is authoritative, informative, and has an attractive graphic layout, it is a good resource to introduce teachers, administrators, board members and parents to the special needs of gifted and talented students. The report is available free from many congressmen.

ETHERIDGE, GEORGE W., HEDGES, ROBERT E., AND YOUNGS, RICHARD C., Teacher, Child and Curriculum. "A Program for Individualizing Instruction". Monograph is part of a training program which utilizes Guilford's Structure of Intellect model to assess human abilities. It includes examples of activities, manipulative materials and references. Applicable to all levels.

GALLAGHER, JAMES, The Culturally Different Gifted Child, A Conference Report. The Council for Exceptional Children, Jefferson Davis Highway, Arlington, Virginia 22202, available in Fall 1974. The educational problems of culturally different gifted children were the focus of a work conference held September, 1973 at the Quail Roost Conference Center; Rougemont, North Carolina. This report is a summarization of the major issues and barriers perceived by over forty participants who work with culturally different gifted children, and the recommendations for action to overcome these barriers. This report will be sent free to all current members of TAG.

GALLAGHER, JAMES J., ASCHNER, MARY JANE AND JENNÉ, WILLIAM, Productive Thinking of Gifted Children in Classroom Interaction. CEC Research Monograph Series B, No. B-5. Washington, D.C.: The Council for Exceptional Children, NEA, 1967. Content includes an overview, objectives and applications of the various thought processes on both primary and intermediate levels.

GIBBONY, HAZEL L., Enrichment Classroom Challenge. Ohio: Columbus Blank Book Company, 1966. Many ideas and activities that can be used with individual students or groups both on the elementary and secondary school level, encompasses the basic subject areas, e.g. language arts, social studies, science, math, art and music.

GUBSER, JOY HILLS AND HAGGERTY, CHARLES P., Planning for Able and Gifted Children in Oregon. Salem, Oregon: Oregon State Department of Education, 1962, pp. 19-44. Content includes many suggestions for enrichment in academic areas. Also it includes sources for instructional material and bibliography for reference on both the primary and intermediate levels.

HILL, MARY BRODERICK, (ed.), Enrichment: Programs for Intellectually Gifted Pupils. Sacramento, California: California State Department of Education, 1969. A final report on the Enrichment Program conducted in the Los Angeles Unified School District. It includes outlines of courses which provide enrichment through the development of creative expression, critical appreciation, and the scientific approach.

HOPKINS, LEE BENNETT AND SHAPIRO, ANNETTE D., Activities for Gifted Children in the Classroom. School and Community. New York: Bank Street College of Education. A series of suggested experiences which can be utilized in the classroom and in the community, including resources for trips on primary and intermediate levels.

HOPKINS, LEE BENNETT AND SHAPIRO, ANNETTE FRANK, Creative Activities for the Gifted Child. Palo Alto, California: Fearson Publishers, 1969. More than 100 enrichment ideas, many of which can be self-directed. The areas covered are art, science, geography, social sciences, history, mathematics, political science, music, language arts, home economics and physical education.

KAPLAN, SANDRA N., Providing Programs for the Gifted and Talented: A Handbook. (Working Draft) National/State Leadership Training Institute on the Gifted and Talented in cooperation with National Clearinghouse on the Gifted and Talented, July, 1973. This handbook presents background information on program development, worksheets, and models which illustrate successful program ideas. Especially useful is the section on curriculum design which presents guidelines for developing differentiated curriculum materials for the gifted and talented, including theoretical principles and a practical discussion of elements and types.

LEVINE, MARTIN, Social Sciences: Curriculum Guide for Teaching Gifted Students Social Sciences in Grades Seven Through Nine. Sacramento, California: California State Department of Education, 1973. A unit of study for grades 7-9 intended to heighten student awareness of justice and due process of law through meaningful involvement with the Bill of Rights. There are sample lesson plans and behavioral objectives which apply to both cognitive and affective areas. Ideas are included for role playing, group discussion. Bibliography included.

LUCA, MARK C. AND ALLEN, BONNIE. Teaching Gifted Children Art in Grades Four Through Six. Sacramento, California: California State Department of Education, 1973. Curriculum guide which emphasizes the nature and purpose of art education.

LEWIS, GERTRUDE M., Educating the More Able Children in Grades Four, Five, and Six. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Many ideas and activities challenging children's abilities.

NEW YORK CITY BOARD OF EDUCATION, Promoting Promise: Report of the Citywide Committee on Gifted Children. New York, New York: Board of Education of the City of New York, 1968. A general overview of present New York City programs for gifted children on three levels, with recommendations for change. Curriculum implications appear on the follow-

ing pages: elementary program descriptions - pp. 18-20; junior high program descriptions - pp. 29-30, 34; high school honors and talented programs - pp. 42-44.

NEW YORK CITY BOARD OF EDUCATION, Division of Elementary Schools, Guiding the Gifted: Vol. 6, Number 1. Board of Education, City of New York, 1965. Descriptions of teachers' experiences, techniques and devices used in New York City Schools to involve gifted children in the critical thinking process.

PAULUS, DIETER H., SHAW, ROBERT A., BENNY, ROSALIE J., DAVIS, SYLVIA A., GAGNE, DOMINIQUE R., AND HOLCOMBE, ELAINE K., Operation ASTRA: A Study Guide for Sentence Reasoning, An Experimental Unit. Hartford, Connecticut: Hartford Public Schools, 1969. An enrichment unit designed to nuture rational thinking in the middle grades.

PILCH, MARY M., (Project Director), Special Education for the Gifted Through Television. Minnesota: Educational Research and Development Council of Northeast Minnesota, 1968. Model incorporates instructional television with the development of creative thinking and teaching strategies in the middle schools.

PLOWMAN, PAUL D. AND RICE, JOSEPH P., (co-directors), California Project Talent. Sacramento, California: California State Department of Education, 1967. Content includes an overview of talent development, exemplary projects and programs on the elementary level.

PLOWMAN, PAUL D. AND RICE, JOSEPH P., (co-directors), Demonstration of Differential Programming in Enrichment, Acceleration, Counseling and Special Classes for Gifted Pupils in Grades 1-9. Sacramento, California: California State Department of Education, 1967. Content includes the design, operation, findings and accomplishments of enrichment, acceleration, counseling and special class programs.

PLOWMAN, PAUL D. AND RICE, JOSEPH P., (co-directors), Final Report, California Project Talent. Sacramento, California: California State Department of Education, 1969. Content includes structural program designs for enrichment, acceleration and counseling-instructional demonstration for both elementary and secondary levels.

REID, AVIS, Let Him Read! In-service Training Manual No. 3. Hutchinson, Minnesota: Gifted Opportunities Center, March, 1970. Rather than an outline for reading curriculum, this bulletin capsulates the ideas of many experts for reading programs for gifted children - pp. 9-14.

RENZULLI, JOSEPH S., New Directions in Creativity. New York: Harper and Row, 1973 (3 vols.). Contains practical suggestions and classroom exercises for developing creativity in the language arts. Based on the divergent-production slab of Guilford's Structure-of-Intellect model. Each volume also has dozens of ditto masters for activities in grades 4 through 7.

ROBECK, MILDRED C., Acceleration Programs for Intellectually Gifted Pupils. Sacramento, California: California State Department of Education, 1968. pp. 60-71. An overview of the curriculum offerings in a six-week summer program which resulted in accelerating second grade students into the fourth grade.

ROBECK, MILDRED C., (ed.), Special Classes Demonstration: Special Classes 3, Social Science, How the Anthropologist Studies Man - The Chumash Indians. Sacramento, California: California Talent Development Project, State Department of Education, April, 1966. This publication is a detailed unit of study on the Chumash Indians which illustrates how a course of study may be consciously planned to direct the thinking operations of students to higher levels than may be attained by undirected approaches. Guilford's Structure-of-Intellect model was used as a basis for planning, with attention given to social science content, intellectual content, and affective content. The approach could be adapted to other subject areas, particularly in the social sciences. Level - Grade 4.

SHAW, ROBERT A., et al. An Adventure in Geometry: Experimental Unit Developed for Operation ASTRA. Hartford, Connecticut: Hartford Public Schools Production, 1969. A 99-page self-directed activities workbook in geometry designed by the Hartford, Connecticut Regional Planning Program for Academically Gifted Children as a supplementary enrichment unit to further the intellectual development of youngsters with identifiable superior abilities. It provides differentiated experiences at the middle grade level.

SHAW, ROBERT A., et al. Modular Arithmetic: Enrichment Unit Developed for Operation ASTRA. Hartford, Connecticut: Hartford Public Schools Production, 1969. An 86-page self-directed activities workbook in modular arithmetic, developed by the Hartford, Connecticut Regional Program for Academically Gifted Children as a supplementary enrichment unit to further the intellectual development of youngsters with identifiably superior abilities. It provides differentiated mathematical experiences for the middle grade level.

TONGUE, CORNELIA, (ed.), PotPourri: Productive Programs for Gifted/Talented. Raleigh, North Carolina: Division for Exceptional Children, Department of Public Instruction, 1972. This is a compilation of about forty descriptions of programs in the state of North Carolina which were evaluated as outstanding or which possessed worthwhile components on the instructional level for the gifted child. Although not detailed in respect to curriculum content, it describes a variety of approaches: enrichment, resource teacher, team teaching, multi-graded, self-contained, year-round school, advanced placement, honors program, etc. for grades 1-12. A contact person is listed with each program description.

VASSAR, WILLIAM G., Strengthening State and Federal Relationships in the Education of the Gifted and Talented: A Syllabus for the First National Summer Institute on the Education of the Gifted and Talented. Ventura County, Illinois: Ventura County Superintendent of Schools, July, 1973. Points out the direction in curriculum planning for the gifted toward differentiated curriculum. It suggests the roles of the state education agency and the local education agency in providing services for curriculum planning.

WILLIAMS, FRANK E., Total Creativity Program for Individualizing and Humanizing the Learning Process. Englewood Cliffs, N.J.: Educational Technology Publications. A kit with many components for teaching the thinking and feeling processes. Includes hundreds of actual lesson ideas, evaluation forms, teaching strategies, and observational instruments used in language arts, social studies, science, arithmetic, art, and music. Also includes a media resource book, teaching strategies, and cassettes on teacher training and demonstration lessons.

CALIFORNIA STATE DEPARTMENT OF EDUCATION, Education of Mentally Gifted Minors. IC-12, Capitol Mall, Sacramento, California, 1971.

FLIEGLER, L.A., (ed.) Curriculum Planning for the Gifted. Prentice-Hall: Englewood Cliffs, N.J., 1961.

GALLAGHER, JAMES, Teaching the Gifted Child. Allyn Bacon, Inc., Boston, 1964.

GUILFORD, J.P., Intelligence and Creativity: Their Educational Implications. Robert Knapp Publishers, Great Britain and San Diego, 1968.

MARTINSON, RUTH A., Curriculum Enrichment for the Gifted in Primary Grades. Prentice-Hall, 1968.

PARNES, SIDNEY, Creativity: Unlocking Human Potential. D.O.K. Publishers, Buffalo, New York, 1972.

WARD, V.S., Educating the Gifted. Charles Merril Books: Columbus, Ohio, 1961.

ABSTRACTS OF SELECTED MATERIALS ON CURRICULUM FOR THE GIFTED AND TALENTED

AVAILABLE FROM

The CEC Information Center on Exceptional Children

The CEC Information Center was established at the Council for Exceptional Children to serve as a comprehensive source of information on research, instructional materials, programs, administration, teacher education, methods, curriculum, etc., for the field of special education. The Center functions as the Clearinghouse on Exceptional Children in the Educational Resources Information Center's (ERIC) program and also as a member center in the Special Education IMC/RMC Network.

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ABSTRACT 10301

EC 01 0301 ED 017 107
Publ. Date 66 89p.
Experiments in Musical Creativity. A Report of Pilot Projects Sponsored by the Contemporary Music Project in Baltimore, San Diego, and Farmingdale.
Music Educators National Conference.
Washington, D.C.
EDRS mf

Three pilot projects were conducted in Baltimore, Maryland, San Diego, California, and Farmingdale, New York, with elementary and junior high school students. The projects in Baltimore and San Diego provided inservice seminars for music teachers along with pilot classes in different types of schools. Objectives of these two projects were presentation of contemporary music to children through suitable approaches. Experimentation with creative music experiences for children, identification of contemporary music appropriate at several grade levels, provision through contemporary music of new means of creative experiencing, and inservice education of teachers. The pilot project in Farmingdale was designed to demonstrate two types of creative teaching, experimental techniques in music composition using 20th century idioms and the development of

musical resources through rhythmics, singing improvisation and composition. The interest and motivation which resulted on the part of teachers and pupils were viewed as supporting the premise that children are receptive to contemporary music and are capable of employing contemporary techniques in creative activities. Recordings of some of the contemporary music used in the projects are listed. This document was published by the Music Educators National Conference. 1201 16th Street, N.W., Washington, D.C. 20036. (CB)

ABSTRACT 10665

EC 01 0665 ED N.A.
Publ. Date 61 414p.
Fliegler, Louis A., Ed.
Curriculum Planning for the Gifted.
EDRS not available
Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Designed for teachers, administrators, and curriculum specialists, the book is a resource compendium or a basic text on curriculum development for the gifted. Basic problems, principles of curriculum construction, program development, and administrative provision are discussed . Content, skill development, pupil identification, and enrichment activities are included for each of these subject areas: social studies, arithmetic, creative mathematics, elementary and secondary science, creative writing, reading, foreign languages, creative art, music, and dramatics. Curriculum implementation is also considered. (1M)

ABSTRACT 11367

EC 01 1367 ED N.A.
Publ. Date 66 330p.
Gallagher, James J.
Teaching the Gifted Child.
EDRS not available
Allyn and Bacon, Inc., 150 Tremont Street, Boston, Massachusetts 02111 ($7.95).

Addressed to the teacher, the text defines gifted children and their characteristics. Low producing gifted children are discussed, as are means of programing for them. Also treated are changing school programs, administrative changes, and personnel. Creativity is described and discovery and inquiry are examined as tools for teaching. Arithmetic, science, and social studies curricula and programs are surveyed. (JD)

ABSTRACT 10919

EC 01 0919 ED 026 762
Publ. Date 65 534p.
Barbe. Walter B.
Psychology and Education of the Gifted: Selected Readings.
EDRS not available
Appleton-Century-Crofts
440 Park Avenue South. New York, New York 10016 ($4.50)

An overview of educational and psychological literature concerning the gifted is presented in 55 papers with editorial comments. The historical development of the study of the gifted and cultural attitudes are first considered. Discussions of the effectiveness of various screening methods for identifying the gifted include evaluation of creative, social, and other nonintellectual factors: suggestions are given for providing an optimal environment. Theories are discussed about hereditary and environmental influences on mental ability with ideas for conserving and increasing our supply of superior mental talent. Writings on the characteristics of eminent scientists, unstable geniuses, superior college students, and younger gifted children are included in a consideration of the gifted individual's intellectual, social, and emotional characteristics. Special programs to help develop and encourage giftedness, such as acceleration, enrichment, and homogeneous grouping are described and evaluated: current issues and needed research are considered: and teacher qualities judged effective in aiding creative growth are discussed. (RM)

ABSTRACT 11877

EC 01 1877 ED 028 546
Publ. Date 68 38p.
Keaster, Charles W.
The Mentally Gifted Minor Program; Report of a Study Made by the Division of Special Schools and Services. California State Department of Education, Sacramento, Division of Special Schools and Services
EDRS mf.hc

A description of programs for mentally gifted students covers types of programs, current status of the California program, and state apportionments for excess costs. Program characteristics listed are the objectives of three school districts, information program on program costs, school district participation, and district participation in a special study. Findings and recommendations are discussed in terms of school dis-

trict Form J22 MG reports, criteria for determining excess expense, expenses and subsidiary accounts, pupil identification, judgment and test scores as criteria for placement, identification cost reimbursements, individual counseling with pupils and parents, special consultant services, special instructional materials, equipment items, special instructional services, teacher salaries, operating costs, and considerations of current funding, incidence in districts, and summer school programs. Six tables present data. (RP)

ABSTRACT 11048

EC 01 1048 ED N.A.
Publ. Date Sep 68 88p.
Pilch, Mary M.
Special Education for the Gifted through Television; Syllabus 1968-69, A Compendium of Information about a Special Educational Television Program Organized and Developed for Challenging the Productive-Divergent Thinking Potential of Gifted Students in Grades 5-6-7.
Educational Research and Development Council of Northeast Minnesota, Duluth Office of Education (DHEW), Washington, D.C.
EDRS not available
OEG-3-7-7-03260-4955
P-OE-67-03260-1

A series about man and his future developed for gifted students in grades 5, 6, and 7 are described. the differences between the three related areas, content, process, and inservice, are mentioned, and the dates, times, titles, and instructors of programs are given. A model for teaching productive-divergent thinking developed by Frank E. Williams lists 23 teaching strategies which are discussed. Synopsis of the 54 half-hour programs comprising the series, (18 programs in each of the three areas), are provided. Content and proccess areas designed for students are organized according to theme, film data, film concepts, vocabulary, provocative questions, concepts emphasized, and strategies demonstrated while an interpretation and discussion of strategies is given for the inservice shows. Programs cover the following topics: the need for space to control population explosion and to implement new communication systems, and the need for exploration of outer space and transportation problems, health needs, the problem of adequate education for a complex society, and the search for beauty. (RP)

ABSTRACT 20002
EC 02 0002 ED 020 590
Publ. Date 66 144p.
Gallagher, James J. and Others
Educational Problems and Planning for Gifted Students--Selected Papers from Graduate Leadership Training Program on the Gifted.
Illinois University, Urbana, Institute for Research On Exceptional Children:
Illinois Department of Program Planning for the Gifted, Urbana
EDRS mf, hc

Seven articles from the Institute for Research on Exceptional Children consider the gifted child. The first article, Leadership Training for the Gifted--A Graduate Program, is by J.J. Gallagher, director of the program. Six research and development papers by graduate students follow: The Variables of Race, Sex and Intelligence Related to Social Choices of Disadvantaged, Gifted Children by V. Godman; Honors Program Students--Their Academic Attainments, Personality Traits and Self Concepts by W.D. Simmons; An Analysis of the Verbal Definitions of Elementary School Children--A Pilot Study by M. Weiser; Evaluation of a Summer Workshop on Gifted Children by F. Shaffer; Developing a Social Studies Curriculum for Teaching Values in the Elementary School by M. Schevers; and The Development of a Program of Sentential Logic for Gifted Students by K.A. Retzer. The student papers all provide figures, tables, and reference lists. (JD)

ABSTRACT 20031
EC 02 0031 ED 027 652
Publ. Date 65 353p.
Torrance, E. Paul
Rewarding Creative Behavior; Experiments in Classroom Creativity.
Minnesota University, Minneapolis, College of Education
Office of Education (DHEW). Washington, D.C., Cooperative Research Branch
EDRS not available
CRP-725
Prentice-Hall, Inc. Englewood Cliffs, New Jersey 07632 ($7.95)

The need for rewarding creative thinking is asserted; a plan is proposed for studying evaluation and creative behavior; and measurement of creative behavior is discussed. Three groups of studies are presented. The first set considers the ways the intermediate environment rewards creative behavior: aspects treated include applying principles for rewarding creative thinking, creative and critical evaluative attitudes of teachers, creative activities as rewards for creative thinking, and differential rewards for boys and girls. The second set investigates the following issues about the evaluative behavior of the classroom teacher: competition as external evaluation; unevaluated practice and creative behavior; critical and creative peer-evaluated practice; evaluative discussions about creative productions; peer pressures in homogeneous and heterogeneous groups; positive, negative, and trouble-shooting evaluation; and cultural difference in evaluating creative characteristics. The final study concerns helping children value their ideas. Practical applications of the studies are presented; appendixes are provided on the instruments used in the described studies and on developing creative thinking through language arts. (JD)

ABSTRACT 20614

EC 02 0614 ED N.A.
Publ. Date 65 472p.
Gold, Milton J.
Education of the Intellectually Gifted. Charles E. Merrill International Education Series.
EDRS not available
Charles E. Merrill Books, Inc.
1300 Alum Creek Drive,
Columbus, Ohio 43216.

Diverse research materials were used to support concepts in the identification and nurturing of gifted children in schools. Giftedness is viewed in terms of heredity and environment with added attention to characteristics, creativity and the capacities for testing and identifying these ascribed attributes. Focus is then turned to program planning, program patterns, and the teaching of thinking, language arts, social studies, science, mathematics and fine arts for exceptionally intelligent students from elementary through secondary level. Special emphasis is given to the types and duties of personnel, especially those in guidance, who are needed for the maximum development of gifted students. Problems that could occur in dealing with achieving and underachieving gifted pupils, such as ability grouping, acceleration, and motivation, are extensively discussed. A reference list cites 468 items. (JP)

ABSTRACT 22104
EC 02 2104 ED 035 524
Publ. Date 69 93p.
Reading for the Gifted: Guided Extension of Reading Skills Through Literature. Part V.
Los Angeles City Schools, California, Division of Instructional Planning and Services
EDRS mf. hc

Guidance is provided in this instructional bulletin for study by gifted pupils of a series of books related to the central theme. The Development of Strong Moral Character Through Overcoming Adversity. The books selected provide opportunities for the examination of moral and spiritual values. The instructional materials developed and books selected were done so specifically for use by gifted pupils at grades 3 and 4. Literary terms are defined, synopses of the selected books and instructional information for many are included, plus biographical information about most of the authors. References are given. (NH/Author)

ABSTRACT 21746
EC 02 1746 ED 035 125
Publ. Date 68 85p.
Vassar, William G. Ed:
Renzulli, Joseph S. Ed.
The Gifted Child in Connecticut: Practical Suggestions for Program Development.
Connecticut State Department of Education. Hartford.
Bureau of Pupil Personnel and Special Educational Services
EDRS mf.hc

Materials are presented to assist local school personnel in the adoption of successful programs and services for gifted and talented pupils. Articles offering sclutions to problems in, or suggesting ideas and guidelines for, educational programing include the broadening concepts of giftedness, by E. Paul Torrance; justification for special programs, and initial practical requirements for developing local programs, both by Virgil S. Ward; homogeneous grouping, by Walter B. Barbe; a plan for identification, by John C Gowan; acceleration, by Mary M. Pilch; and seven essentials of programs, by Joseph S. Renzulli. Other articles furnish lists of questions for staff evaluation of the gifted problem, outline the role of local administrators and of the state department of education, suggest criteria by which to guide programs, and list some of the

current practices being followed in programing in the nation's secondary schools. How the teacher can further creativity is the subject of material adapted from E. Paul Torrance and from John C. Gowan and George D. Demos. Several systems and special projects in Connecticut and Massachusetts are recommended for visitation, and guidelines for Connecticut administrators, based upon legislative enactments, are suggested. (WG)

ABSTRACTS 30729
EC 03 0729 ED N.A.
Publ. Date Mar 70 4p.
Horn. Lister W. Gleason, Gary M.
Teaching a Unit on the Computer to Academically Talented Elementary School Children.
EDRS not available
Arithmetic Teacher: V17 N3
P216-9 Mar 1970

Concepts of the computer were taught to academically talented fifth and sixth grade students in 10 sessions of one and a half hours each. Included in the unit were computer history, numeration systems, computer hardware, and FORTRAN programing. Students wrote programs independently, showed interest, and gained understanding of a language of programing. Suggestions for improved units are discussed. (MS)

ABSTRACTS 32485
EC 03 2485 ED N.A.
Publ. Date 70 272p.
Hildreth, Gertrude Howell
Educating Gifted Children at Hunter College Elementary School.
EDRS not available
Greenwood Press, Inc., 51 River side Avenue, Westport, Connecticut 06880.

Examined are the role and the achievements of Hunter College Elementary School in New York City in educating gifted children. Distinctive features characterizing the program of the school are described. Data cited refer to the school's first 10 years (1941-1951). The discussion covers administrative organization, goals and curriculum, class organization, teaching methods, instructional resources, and specific instruction in subject matter and academic skills. Also covered are school life and school-community and school-parent relationships. The guidance and adjustment of gifted children are appraised, and the role of the school in the preparation of teachers of the gifted outlined. Evaluative evidence relating to the academic achievement, skills, and attitudes of students is cited to establish the validity of the school's program. (KW)

ABSTRACT 42229
EC 04 2229 ED 063 717
Publ. Date 71 13p.
Project Gifted.
Cranston School Dept., Rhode Island, Bureau of Elementary and Secondary Education (DHEW/OE). Washington, D.C.
EDRS mf. hc

Descriptors: exceptional child education: gifted: intermediate grades: educational programs: student placement: program descriptions.

Covered in the short discussion of Project Gifted for intermediate grade children are program description, instructional strategy, classification of question categories to cue various levels of thinking, traits common to intellectually gifted students, and procedure for selection of students participating in Project Gifted. Project Gifted is described to foster a learning environment that enables a child to become a critical thinker. The instructional strategy is said to employ Bloom's Taxonomy of Educational Objectives as a frame of reference. The classification of question categories includes knowledge, comprehension, application, analysis, synthesis, and evaluation. Then follow brief statements about 17 traits common to intellectually gifted students. The procedure for selection of students is described to involve language arts, mathematics, and reading results on an achievement test battery, verbal test scores, administration of the Stanford Binet Individual Intelligence Test and the Wide Range Achievement Test, results of a teacher behavior rating scale, a selection committee, and informing appropriate parents that their children have been selected for the program. (For related studies, see also EC 042 227-8 and EC 042 230). (CB)

ABSTRACT 40452
EC 04 0452 ED N.A.
Publ. Date 71 9p.
Torrance, E. Paul
Identity: The Gifted Child's Major Problem.
EDRS not available
Gifted Child Quarterly: V15 N3 P147-55 Fall 1971
Paper Prepared for the 18th Annual Meeting of the National Association for Gifted Children. Chicago, Illinois. May 6, 1971.

Descriptors: exceptional child research; gifted; creative ability; behavior patterns; case studies; self actualization; creativity research.

Three response patterns of conformity, rebellion, and creative individuality that were found to characterize gifted children's resolve of the search for their identity were illustrated by brief case studies of six gifted young people. The gifted young persons were viewed first, during the seventh to 12th grade period and second, during the ages of 25 and 30. It was found that gifted children needed freedom to wander, to experiment, to risk, and to discover their individual limits, which ultimately enabled them to find their identity. Lives of the six young people described were said to reveal the duality of the unique and universal. Each was said to seek his unique identity and yet, seeking identity was characterized as a universal phenomenon. The author concluded by advocating that gifted children receive supporting adult guidance in the quests for their identity. (CB)

ABSTRACT 42917
EC 04 2917 ED N.A.
Publ. Date Sep 72 5p.
Keating, Daniel P.; Stanley, Julian C.
Extreme Measures for the Exceptionally Gifted in Mathematics and Science
EDRS not available
Educational Researcher. VI N9
P3-7 Sep 1972

Descriptors: exceptional child research; gifted; junior high school students; educational needs; mathematics; sciences; educational opportunities; advanced placement; case studies; undergraduate study.

Reported was a research project on the educational needs of children exceptionally gifted in mathematics and science. A contest was organized to discover outstanding seventh, eighth and 13 year old ninth graders in which 396 students took the College Board's Standard Achievement Test-Mathematics and its Math Level 1 achievement test, and 192 students took the Sequential Tests of Educational Progress, Series II (Step II) Science, Forms IA and IB. It was found that a significant number of students already knew much of the math and science they supposedly would be taught in high school. Case studies of a 12 year old and a 13 year old who were sent to college on the basis of their test scores were examined. Each student evidenced superior academic adjustment without any major emotional or social difficulties. Released time, evening, and summer courses were suggested as a way of meeting the educational needs of advanced students. A minimum estimate of the percentage of highly mathematically or scientifically precocious youths was reported to be .03%. Striking sex differences in high level achievement were noted.

Instructional Materials and Strategies for Teaching Gifted and Talented Students. Research # 740.260 prepared in April, 1974 by the Educational Resources Center, Area Cooperative Educational Services, 12 Village Street, North Haven, Connecticut 06473.

The staff at the Educational Resources Center did a complete search by computer for all available ERIC information since 1969 related to specific areas of curriculum development for the gifted. The complete report includes (118) abstracts and is located for future reference at the Educational Center for the Arts, 55 Audubon Street, New Haven, Connecticut 06510.

The following abstracts represent a sampling of some of the most relevant materials.

ED079905 EC052319
CAREER EDUCATION FOR GIFTED AND TALENTED STUDENTS.
Hoyt, Kenneth B.; Hebeler, Jean R.
Maryland Uni., College Park.
Spons Agency-Office of Education (DHEW), Washington, D.C.
Grant-OEG-0-72-4843
Pub Date 73 Note-273p.
EDRS Price MF-$0.65 HC-$9.87
Presented are 11 invited papers on career education for gifted and talented students. An introduction to career education and to the gifted and talented is provided in two papers, of which one paper is on current status and approaches in career education, and the other is on current status and approaches to the gifted and talented. Considered in three basic background papers are the future of work, identification and characteristics of gifted and talented students, and career development problems of gifted and talented students. Discussed in the next two papers are value considerations in career education for gifted and talented students. Exemplary programs in career education for the gifted and talented are described in the next chapter. The final section examines implications for curriculum guidelines in career education for gifted and talented students in three papers on the following topics: policy considerations, additional viewpoints on policy considerations, and curricular considerations. (DB)

ED071150 EA004642

ALTERNATIVE SCHOOLS: PIONEERING DISTRICTS CREATE OPTIONS FOR STUDENTS. EDUCATION U.S.A. SPECIAL REPORT.

Watson, Douglas
National School Public Relations Association, Washington, D.C.

Pub Date 72 Note-65p.
Available from-National School Public Relations Association, 1801 North Moore Street, Arlington, Virginia 22209. (Stock #411-12834, $4.00, Quantity Discounts)
EDRS Price MF-$0.65 HC Not available from EDRS.

This report examines some of the many varieties of alternatives now available, their problems and pitfalls, and their hopes for the future. After defining alternative schools, the report discusses the rationale for having alternatives and then summarizes the range of alternatives available at both the elementary and secondary levels. Separate chapters are devoted to open plan schools; minischools; Elementary alternatives; dropout schools; schools for slow learners, superior students, and for those students with other special problems; schools for racial or ethnic groups; and open schools for all students. Throughout the report descriptions of existing alternative programs in various parts of the country are presented. Chapters at the end of the report present advice on starting an alternative school, evaluating the school and its students, and on the financing and costs of an alternative school program. A 42-item annotated bibliography is included. (DN)

ED060587 EC041515

SCIENCE: CURRICULUM GUIDE FOR TEACHING GIFTED CHILDREN SCIENCE IN GRADES ONE THROUGH THREE.

Morrison, Charlotte
California State Dept. of Education, Sacramento. Div. of Special Education.

Spons Agency-Bureau of Elementary and Secondary Education (DHEW/OP). Washington, D.C.
Pub Date 70 Note-37p.
EDRS Price MF-$0.65 HC-$3.29

The curriculum guide for teaching science to gifted primary grade children in California focuses on natural science, with an emphasis on ecology. Provided are a general overview of the unit, a set of behavioral objectives, a list of generalizations and concepts, a sample teaching-learning plan for the complete unit, and eight sample lesson plans. Each lesson takes up a different ecological topic: substratum, animal movement, seed dispersal, temperature's influence on environment, light, food, water, and erosion. Each lesson plan includes behavioral objectives, teaching strategies, suggested questions and activities, and suggested resource materials. (KW)

ED054594 EC033309

THE GIFTED CLASSROOM.

House, Ernest R.; And Others
Illinois Univ., Urbana. Center for Instructional Research and Curriculum Evaluation.

Spons Agency-Illinois State Office of the Superintendent of Public Instruction, Springfield.
Pub Date Jun 71 Note-166p.
EDRS Price MF-$0.65 HC-$6.58

A report of the Illinois Gifted Program Evaluation, the document first presents origins, policies, and scope of the reimbursement section of the Illinois Plan for Program Development for Gifted Children. Outlined is the evaluation design, in which subjects were 34 school districts representing a 10% stratified random sample of 340 districts. Each of the 34 had received state funds for 2 or more years. Data gathered on the best gifted program in each district included director, teacher, and student interviews, class activities questionnaires, classroom observation, and various documents. Data for five of the programs are presented as case studies. Described are school setting, circumstances for starting program, purposes, activities, and a typical day in class, with teacher and student comments reported. Evaluators' interpretation and discussion of each program is offered; judgment of program value is made on the basis of stated standards. Finally, findings from previous examinations of specific aspects of the reimbursement phase of the Illinois program are discussed, along with two aspects not previously reported: analysis of classroom verbal interaction and assessment of inservice training programs. (KW)

ED048697 EC031963

LITERATURE: CURRICULUM GUIDE FOR TEACHING GIFTED CHILDREN LITERATURE IN GRADES NINE THROUGH TWELVE.

Osen, Deborah K.
California State Dept. of Education, Sacramento. Div. of Special Education.

Spons Agency-Bureau of Elementary and Secondary Education (DHEW/OE). Washington, D.C.
Pub Date 70 Note-46p.
EDRS Price MF-$0.65 HC-$3.29

One of a series, the guide explores a special approach to the study of literature for gifted high school students. Curriculum objectives are stated based on the course framework: the types of literary criticism most prevalent in the twentieth century. Three sequences are discussed: looking at literature through the eyes of the new critics, the probe of the psychological critic, and a mythic approach to literary criticism. Suggestions for evaluation are included. A companion volume for teaching children in grades 1 through 3 is available as EC 031 962. (RJ)

ED060591 EC041519

SOCIAL SCIENCES: CURRICULUM GUIDE FOR TEACHING GIFTED STUDENTS SOCIAL SCIENCES IN GRADES TEN THROUGH TWELVE.

Popham, Donald F.

California State Dept. of Education, Sacramento. Div. of Special Education.

Spons Agency-Bureau of Elementary and Secondary Education (DHEW/OE). Washington, D.C.

Pub Date 71 Note-43p.

EDRS Price MF-$0.65 HC-$3.29

The curriculum guide for gifted senior high school students presents an exemplary course of study in United States history at the 10th grade level. Each chapter deals with a different aspect of the course of study: changes in social structures, development of a sense of nationality, enslavement and mistreatment of Negroes, concentration of power in America, and foreign relations. Specified for each topic are behavioral objectives, content and concepts to be covered, selected references, and activities. (KW)

ED062262 S0003037

PROJECT IMPLODE. IGNITING CREATIVE POTENTIAL.

Bella Vista Elementary School, Salt Lake City, Utah.

Spons Agency-Office of Education (DHEW), Washington, D.C.

Pub Date 71 Note-136p.

Available from-Bella Vista School, 2131 East 7000 South, Salt Lake City, Utah 84121 ($3.00)

EDRS Price MF-$0.65 HC Not Available from EDRS.

This booklet was produced for teachers in the hope that the philosophy of multiple talents, and productive thinking will be an aid in the development of future citizens. In the introduction, Calvin W. Taylor discusses talents as the central focus in all classrooms, new tests for identifying important talents heretofore neglected, and the need of a multiple accountability system for assessing educational outcomes. Each section on divergent production, convergent production, evaluation, creativity, planning, communication, forecasting, decision making includes guidelines for recognizing and developing talents in that area. Talent development objectives with student activities are outlined, and related curriculum activities suggested. A lesson plan example and bibliography are appended. (VW)

ED074679 EC051699

SOCIAL SCIENCES: CURRICULUM GUIDE FOR TEACHING GIFTED STUDENTS SOCIAL SCIENCES IN GRADES SEVEN THROUGH NINE.

Levine, Martin

California State Dept. of Education, Sacramento. Div. of Special Education.

Pub Date 73 Note-61p.

EDRS Price MF-$0.65 HC-$3.29

Presented is a curriculum guide for teaching gifted junior high students social studies. The main purpose of the curriculum is to heighten student awareness of justice and due process of law by means of preparing for and conducting a mock

trial of an historical figure. Thirteen cognitive behavioral objectives and five affective objectives are listed. Five to seven class periods are recommended for phase one of the curriculum which consists of motivation and background, introduction on themes and a study of the life and times of the defendant. Sample lesson plans are given for study topics such as the rights of the accused, the Bill of Rights, unreasonable search and seizure, the right to remain silent, and an introduction to due process. Phase two of the curriculum consists of preparation of roles for the trial in small groups and involves research skills and teacher-group interaction for five to eight class periods. Sample lesson plans consider initiation of phase two, organizing the groups, small group work, the culminating activity program, and suggested follow-up activities. A final chapter gives sample test items. An annotated bibliography of approximately 30 books or articles, six motion pictures and one filmstrip are also included. (DB)

ED073575 EC051123

HANDS-ON, CAREER EXPLORATION FOR BRIGHT STUDENTS.

Stovall, Betty J.; And Others

North Carolina State Dept. of Public Instruction, Raleigh. Div. for Exceptional Children.

Pub Date 72 Note-92p.

EDRS Price MF-$0.65 HC-$3.29

Produced as part of a 5 week workshop on career explorations for 51 bright, middle grade students and 20 teachers, the curriculum guide discusses career education, outlines the workshop experiences, considers the inquiry process, and outlines 60 units on non-baccalaureate careers in 15 career clusters. A lack of career education programs with other than a college preparatory emphasis for bright students is said to have led to the workshop which provided teacher inservice training and 3 weeks of pupil experiences in six career clusters. Workshop experiences are reported to have included field trips, simulations, and actual experience with activities such as telegraphy, drafting, and bricklaying. The inquiry process of instruction which utilizes a variety of learning and teaching styles is outlined. The majority of the guide contains the career exploration units of which the tobacco farmer, floral designer, commercial bank teller, and game warden are examples. Units are outlined in terms of career cluster, career, suggested problem, introductory activities, hypotheses, investigation, conclusion, presentation, evaluation, and related disciplines. Appendixes include work preference scales used to evaluate the workshop. (DB)

ED054594 EC033309

THE GIFTED CLASSROOM.

Rouse, Ernest R.; And Others

Illinois Univ., Urbana. Center for Instructional Research and Curriculum Evaluation.

Spons Agency-Illinois State Office of the Superintendent of Public Instruction, Springfield.

Pub Date Jun 71 Note-166p.

EDRS Price MF-$0.65 HC-$6.58

A report of the Illinois Gifted Program Evaluation, the document first presents origins, policies, and scope of the reimbursement section of the Illinois Plan for Program Development for Gifted Children. Outlined is the evaluation design, in which subjects were 34 school districts representing a 10% stratified random sample of 340 districts. Each of the 34 had received state funds for 2 or more years. Data gathered on the best gifted program in each district included director, teacher, and student interviews, class activities questionnaires, classroom observation, and various documents. Data for five of the programs are presented as case studies. Described are school setting, circumstances for starting program, purposes, activities, and a typical day in class, with teacher and student comments reported. Evaluators' interpretation and discussion of each program is offered; judgment of program value is made on the basis of stated standards. Finally, findings from previous examinations of specific aspects of the reimbursement phase of the Illinois program are discussed, along with two aspects not previously reported: analysis of classroom verbal interaction and assessment of inservice training programs. (KW)

ED034353 EC004733

CALIFORNIA PROJECT TALENT: ACCELERATION PROGRAMS FOR INTELLECTUALLY GIFTED PUPILS.

Robeck, Mildred C.

California State Dept. of Education, Sacramento.

Spons Agency-Office of Education (DHEW), Washington, D.C.

Pub Date 68 Note-185p.

EDRS Price MF-$0.65 HC-$6.58

A description of Project Talent includes discussions of preceding research indicating that acceleration was effective and beneficial and outlines provisions utilized for acceleration (early admission, ungraded primary and elementary, individual and advanced placement, grade skipping, combination grades, and time compression). Detailed are the administrative procedures involving the advantages and problems of the program and the establishment of new programs, and the identification and placement of pupils in connection with the role of psychometrists, plus the counseling of pupils; parents, and teachers. The curriculum for the grade 3 summer session, with its goals, content, organization, and evaluation is provided. Functions and selections of case studies as used in the process of identification, and the study of intellectual development of the accelerate are discussed along with counseling methods. Evaluations are presented of the California Project Talent program, Pasadena's acceleration program, the Ravenswood program, and the placement of individuals in the California program. Also included are eight recommendations for the future, research suggestions, appendixes, and tables of results. (JM)